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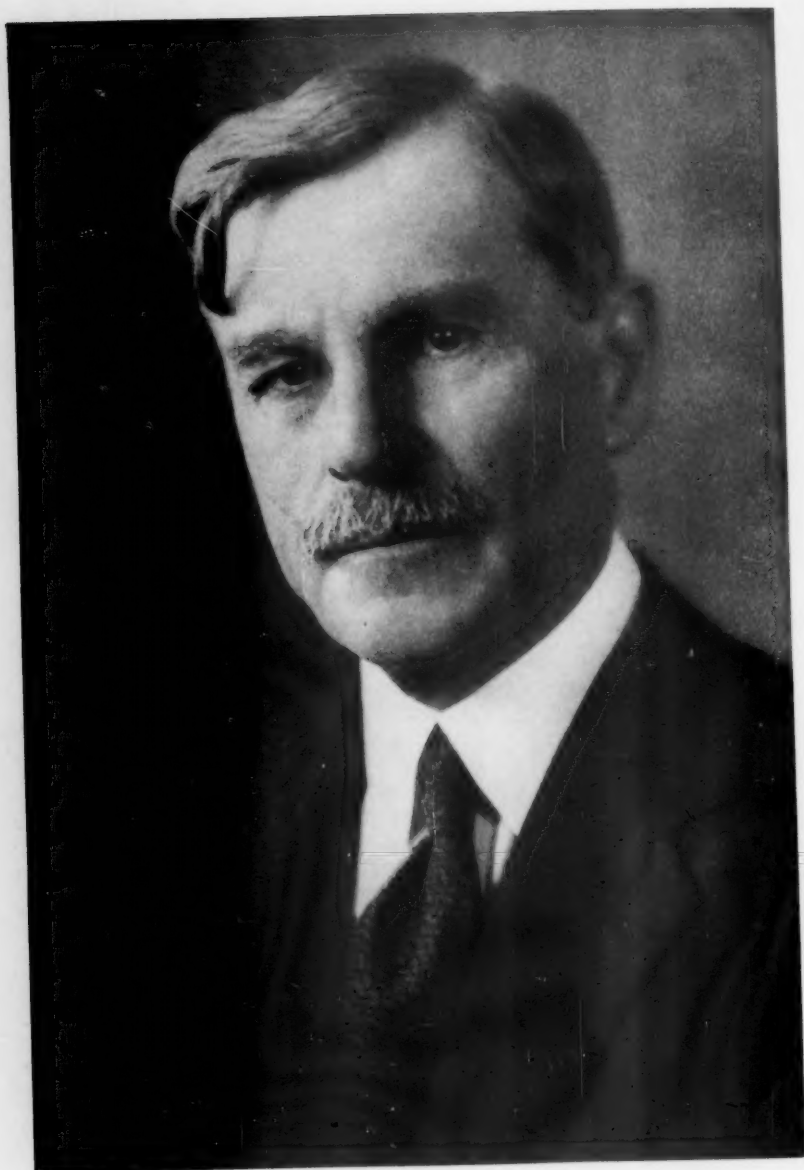
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William L. Russell

# AMERICAN JOURNAL OF PSYCHIATRY

## PRESIDENTIAL ADDRESS.\*

### THE PLACE OF THE AMERICAN PSYCHIATRIC ASSOCIATION IN MODERN PSYCHIATRIC ORGANIZATION AND PROGRESS.

By WILLIAM L. RUSSELL, M. D., WHITE PLAINS, N. Y.

It is an honor and privilege to occupy the high position to which you so generously elected me a year ago. During the year my appreciation has steadily grown. I have, during this comparatively short period, learned more and thought more about the Association than in all the previous years since I became a member. In the midst of a busy life, I have taken time to look through the proceedings of its many meetings, and have read the presidential addresses of several of my predecessors in which psychiatric progress was reviewed. The panoramic view of the development of psychiatry in America thus obtained has given me a clearer perception than I had before of the character and achievements of those who accomplished this development, and especially of the important part which the Association, as an organization, has had in advancing and shaping psychiatric progress. The service that it has thus rendered to America and to humanity is immeasurable. Perhaps its greatest achievement as an organization is the service it has rendered to the establishment, organization, administration and advancement of the hospital treatment of mental disorders. In 1844, when the Association was founded, there were 24 hospitals for mental disorders in fifteen states, with an aggregate capacity of 2500 beds. This was all there was of hospital provision for a general population of 18,000,000 people. The Association, which consisted of a small group of medical superintendents, set for itself the task of "alleviating the condition of the insane in every part

\* Delivered at the eighty-eighth annual meeting of The American Psychiatric Association, Philadelphia, Pa., May 31-June 3, 1932.

of the country." The 25 or 30 years following were attended with great activity in the establishment and development of hospitals, and the Association devoted itself almost exclusively to questions relating to their construction, organization and administration, and to the methods of treatment of the patients in the hospitals, and in their social and legal relations. It constituted what was virtually an advisory committee for the whole country, and its views and recommendations were considered authoritative, not only in the United States and Canada, but also to some extent in Europe. It would probably be hard to find another instance in which a voluntary association of physicians has, with such ability and devotion, applied itself so continuously and so effectively to a public service of such magnitude and importance. Much that is fundamentally essential in hospital construction, organization and administration, which we now take for granted, was worked out and brought into general use by the efforts of these able men. From that day to this the Association has never ceased to bring to bear on the hospital study and treatment of mental disorders the influence and guidance of its organized opinion and effort.

Most of us, perhaps, now think of the Association merely with reference to the annual meeting. We attach importance only to the occurrences, year by year, at this meeting. We are aware, nevertheless, that though meetings, like individuals, come and go, the Association by means of the contributions of its members at its meetings and in its JOURNAL, of the studies, reports, and practical activities of its committees, and of its authoritative formulations and recommendations, has, since its foundation, exercised a constant influence and power in the stimulation, maintenance and guidance of psychiatric standards and progress. Dr. White, in his presidential address in 1925, spoke of this power as "latent" and "very great," and he thought that the Association could "no longer escape the responsibilities that go along with so much power." It may, therefore, be advisable for us sometimes to consider these responsibilities, or, as I prefer to think, opportunities, and the ways in which the Association proceeds in regard to them. Although, as another of my predecessors has said, authorities may differ on the question whether human progress can be accelerated by taking thought, it seems certain that it can at least be guided and shaped so that it may proceed securely and constructively. This is, perhaps,

the kind of service which the Association is able to render to psychiatric progress which, in recent years, has been greatly accelerated. With this in mind, I am venturing, in what I realize is a very imperfect manner, to refer briefly to a few ways in which the Association endeavors, and may, perhaps, extend its endeavors, to take advantage of its opportunities.

In selecting this subject, I was influenced by thoughts of the great enlargement and the increasing complexity of the field in which the Association now functions. It seems a very short time since it was concerned almost entirely with questions relating to the study and treatment of patients who, as Dr. Meyer once said, were "dumped" by the communities into the hospitals. There was really very little psychiatry outside of the hospitals. In those days one rarely heard of more than one psychiatry, or of more than one type of psychiatrist. Now, one hears such terms as extramural psychiatry and psychiatrist, as distinguished from institutional or intramural psychiatry and psychiatrist. There are also neuro-psychiatry, orthopsychiatry, child psychiatry, industrial psychiatry, psychoanalytic psychiatry, and other designations which indicate special interests, activities and viewpoints, and the development of specialization within the general field. Problems and forms of practice that, only a few years ago, were looked upon as outside the scope of psychiatry are now included. So marked is the change that, not infrequently, reference is made to the old and to the new psychiatry. There is, indeed, much that is new, and it is so intriguing that there is some danger of forgetting that it grew out of what preceded it, and that proficiency in the old is the best preparation for understanding and utilizing the new. We have, in fact, entered into a promised land that was discerned by our predecessors who longed to enter in but could not because the times were not yet ripe. The field and responsibilities of psychiatry have been still further extended by the advent of mental hygiene, with its various developments and activities in which it is not always possible to define the line of demarcation from psychiatry.

Coincident with this enlargement and change in the field of its operations, changes are occurring within the Association. During the past 10 years, its membership has increased about 40 per cent. Not many years ago, all except a negligible proportion were engaged exclusively in hospital practice. Now only 54 per cent are thus

engaged, and a variety of psychiatric interests, activities, and viewpoints are represented. Nor is the Association any longer the only national psychiatric organization. Special interests and special forms of study and practice have taken on such proportions that new organizations for their maintenance and development have been considered necessary. General medical organizations are also manifesting more interest in psychiatric topics, and the American Medical Association has undertaken a study of the psychiatric hospitals. By reason of these changes and developments, the way to broader and richer opportunities, and to an enlargement of its interests and of its organized activities has been opened to the Association, but the way is no longer so simple and easy to follow.

In the past, the organized activities of the Association have been directed principally to the hospitals. Most of its committees are concerned with questions relating to their medical and nursing services, to social work, statistics, laboratories and scientific work, general standards and policies, and to the legal aspects of the problems presented by the types of patients cared for. Notwithstanding the change in the character of its membership, and the interest in the hospitals displayed by other organizations, it seems certain that they will continue to receive this kind of attention from the Association. No other organization contains within its membership so much understanding and experience concerning them, or can appreciate so clearly their place and value amongst the forces brought to bear on the problem of mental disorders. Dr. White, in his presidential address, said, "the state hospital as it stands to-day is the very foundation of psychiatry." Dr. Meyer also, in his presidential address in 1928, expressed a similar view, and at the opening of the New York State Psychiatric Institute and Hospital, in 1929, he said: "In all this I should like to emphasize a deep conviction of mine, viz., that in the end the state institution will continue to determine the sense and spirit of psychiatry in this country." This view of the place and value of the state hospitals in the development of psychiatry is perhaps clearly understood only by those who make up the membership of this Association. The character and extent of the present hospital provision for mental disorders in this country and Canada is due, to a considerable degree, to the influence and efforts of the Association. A certain responsibility belongs to this, and, notwithstanding the awakened interest and activity of



other organizations, its continued interest and effort seem to be necessary for the further maintenance of standards and for advancement on sound lines.

The psychiatric hospital, however, no longer occupies as isolated a position as formerly. It is now the senior, and the most substantial member of a group of agencies, interests, and activities that are concerned with the problem of mental disorders. The provision for hospital treatment is itself slowly but surely broadening. In the various communities provision for prompt medical and hospital service is increasing. The laws have been liberalized and medical attention is taking the place of police and poormaster attention. The general hospitals are developing a more tolerant and understanding attitude, and, in many of them, psychiatric facilities have been established, or existing facilities have been improved. Highly organized service, teaching, and research psychiatric hospitals have been established in connection with some of the university hospitals and medical colleges, and other universities are preparing to follow as soon as means become available. These developments in a field that is growing in extent, variety, and understanding will supplement but cannot replace the older type of established hospitals. They will, however, broaden out the provision for the hospital study and treatment of mental disorders, and bring it into closer relations with the other branches of medicine, with medical education, and with community interests generally. The effect on the existing hospitals will, I believe, be wholesome and stimulating, and may contribute to a better understanding and support by the public. Hospital provision and hospital treatment may, by the medical profession and the public, be seen more clearly from the standpoint of the individual in need of their services; as one of the constructive agencies of society, rather than merely as a means of disposing of some of its troublesome members. This, I believe, is the view which the Association aims to advance. It is quite aware that the mere segregating of greater and greater numbers in institutions is not contributing much to the solution of fundamental problems. The question of getting patients out of the hospitals as well as into them is receiving more attention; and, as the interest, understanding, and utilization of psychiatric resources come to prevail more and more in the communities, a truer evaluation of the hospitals in terms of what they accomplish for the individual will

assume increasing importance. The place of prolonged treatment as a curative measure will, I believe, be better understood. Even in such a small hospital as Bloomingdale, 12 of the patients discharged last year as fully recovered, had been under hospital treatment for more than two years, three of them for more than four years. As the hospitals increase in size, and the danger of submergence of the individual increases, the necessity of shaping their organization and administration so as to continue intensive, individual study and treatment for longer periods than is at present possible, is taking on a more insistent aspect. This extension of hospital provision, and advancement in understanding of the problems involved, will doubtless lead to a corresponding broadening of the interests and organized activities of the Association in the field of hospital study and treatment in which it has, since its founding, been a tower of strength and guidance.

The development of newer types of psychiatric service for the communities had, I believe, its beginning in the establishment of out-patient clinics and social work in connection with the hospitals. This form of service has been greatly extended, both as a part of the activities of hospitals, and independently. A recently published list contains 672 of these clinics in 34 states, most of which have been established during the past 10 years. More than a third are exclusively for the study and treatment of children. The statistics of these clinics come far from showing the extent to which psychiatric study and treatment have developed outside of hospitals. Agencies not sufficiently specialized to be included in the list, and private psychiatric practice must also be considered. This form of service has grown enormously and the number administered to, probably equals, if it does not exceed, the admissions to the psychiatric hospitals.

The legal aspects of psychiatry and psychiatric service in dealing with crime and criminals have always had a place in the organized activities of the Association. A Committee on Medical Jurisprudence was appointed at its first meeting. Ever since, its able committees have contributed to the progress that has undoubtedly been made. The improvements that have been made in the laws, and the establishment of psychiatric court clinics are notable marks of progress. It is significant, also, that in at least two states, the head of the State Department of Correction, and in at least one,

the chairman of the Parole Board are highly qualified psychiatrists and members of this Association. In one state a psychiatrist has recently been placed in charge of a new prison, which is constructed and will be administered on advance lines; and for a number of years the head of the state reformatory for women in that state has been a psychiatrist. Psychiatrists are members of the staffs of the federal and of many state prisons, and even where court clinics have not yet been established, psychiatric service for the courts and the management of psychiatric issues are, in many places, more adequately provided for than formerly. There is still much to be done, and it can be taken for granted that the Association in cooperation with other organizations will continue its efforts.

Psychiatry is finding a recognized place in the health organizations of schools, colleges, industrial and commercial organizations, public health work, and of child and adult welfare agencies. In the form of mental hygiene service it has a part in educational organization and wherever character formation and behavior problems are of special concern. It is exercising an influence and a growing importance in the general field of medicine. In the organization and in the curriculum of the medical colleges, psychiatry has in many places been advanced to a major position as an independent department with many more hours of instruction and a larger staff. The head of the department and other positions are, in some instances, on a full time basis. Psychiatric service, and psychiatric instruction are finding a place in the wards and out-patient departments of general hospitals, and in all forms of medical and surgical practice. The development is gradually extending as means are supplied, and questions relating to standards, qualifications, and organization that grow out of it may, with advantage, be the concern of the Association. They are of vital importance to the sound progress of psychiatry in America. Too much dependence cannot be placed upon awakened interest, however sincere, that is not attended with the understanding, knowledge, and ability that are essential to wise planning and sound administration. The ignorance and neglect of mental disorders, not to speak of incapacitating ideas concerning them, that have so long prevailed in the general medical profession and in society, cannot be overcome quickly. "Old ideas do not die when the beliefs which have been explicitly associated with them disappear," says Professor Dewey; "they usually only

change their clothes." Wise and firm psychiatric guidance and leadership, which will require the support and influence of such organizations as this will, therefore, be required in shaping psychiatric medical education and psychiatric service in the field of general medical hospital, out-patient and private practice. Without this aid, medical school and general medical authorities and organizations cannot be depended upon to apprehend the requirements of sound standards and lines of development. The Association has already, by the establishment and work of its Committee on Psychiatry in Medical Education, undertaken to aid with this problem. The study of psychiatric education in the medical colleges of the country which has been undertaken by the National Committee for Mental Hygiene, under the direction of a committee composed principally of members of this Association, reveals the interest that has been awakened, also the need and the desire for wise guidance.

The leading spirits concerned with the interests, viewpoints, agencies, and activities that are, in such variety, developing in psychiatry are, I believe, members of The American Psychiatric Association. Means of organizing special interests as they grow in magnitude, and as to the number of members concerned with them, are taking form within the Association by means of round table conferences and special sections. The need of this is sure to grow, and might, perhaps, in some instances be anticipated before an independent organization appears to those most concerned to be the only way of meeting the requirements. Organization within the Association would seem to be favorable to the guidance of standards, the maintenance of a well integrated psychiatry, and a united front. The growth of specialization in the psychiatry and mental hygiene of children, in the psychiatry of delinquency and the criminal, in psychiatry in medical education, and the increasing number in the membership who are giving special attention to these forms of psychiatric work and development, are examples of special interests that may soon feel a need of organization. The adoption of a well-organized plan for the establishment of sections which should have some degree of permanence, and of independence in organization and activities might, perhaps, during the next year, be given consideration in revising the constitution.

The organized activities of the Association have been directed principally to the maintenance and advancement of psychiatric standards, especially with relation to hospital administration and practice. It will now be necessary for it to operate in a wider field, under more complex conditions than heretofore, and adherence to sound aims and standards has taken on new importance. The advent into psychiatry and mental hygiene of workers who are not physicians has brought with it considerations and complications that were not met with in the simpler conditions of the past. Nurses who have been trained and experienced in psychiatry have been long employed. More recently, psychiatrically trained social workers, and psychologists without medical training have been added. Teachers, clergymen, welfare workers, and others who are specially concerned with behavior and other personality problems have also found that some knowledge of psychiatry and mental hygiene could be used with advantage in their work. This development has, when wisely used and directed, contributed to psychiatric and mental hygiene progress. Some of these non-medical workers have, however, come to feel that many of the psychiatric problems which they meet with can be diagnosed and adequately treated without the aid of psychiatrists. In fact, it is the view of some psychologists that medical and psychiatric training are not essential to enable one to understand and deal successfully with many cases of psychoneurosis and other personality disorders. Psychologists, psychiatric social workers, and, in a few instances, nurses are accepting positions as mental hygiene counsellors for teachers, students, and workers in educational, nursing, and other organizations, without supervision of psychiatrists. Psychologists, who are without medical and psychiatric training, social workers, and others who have been psychoanalyzed and instructed in psychoanalysis, may also be found engaging in the treatment of psychiatric conditions in private practice. Even in medical circles, owing to the long neglect of psychiatry in medical education and general medical practice, many physicians have little understanding of its character and of its history, place, and usefulness as a branch of medicine. They are not sure whether psychology is not as well as, or better prepared to furnish the knowledge and methods required for understanding and treating the mental states presented by their patients. Some of them are under the impression that psy-



chology bears the same relation to psychiatry that physiology bears to medicine generally. Unfortunately for psychiatry this is scarcely correct. Physiology grew out of medicine. It had its origin in the discovery of the circulation of the blood, but many years passed before it reached the dimensions of a separate discipline. For a long time it was called, and books on the subject were entitled, "Institutes of Medicine." Physiology and medicine have developed along the lines of the physical sciences. Psychology, on the other hand, originally grew out of philosophy and metaphysics, and has, until comparatively recently, contributed little to the problems of psychiatry. Much of psychiatry does, indeed, consist of psychological observations and interpretations. They have, however, not been derived from the psychology of the schools and colleges, but are the hard earned fruit of medical study and experience in dealing with the problems of mental disorders as met with by physicians in the course of their practice.

The place of psychology in relation to psychiatry will, until more clearly defined, complicate the question of standards and practice. It is evident that confusion prevails in quite high places. Only recently a university at which there is, in connection with its medical department, a well-organized psychiatric department and hospital, announced that "to fight the complexes and nervous and mental disorders of undergraduates," a "Psychological Clinic" had been established by the Department of Psychology. The National Research Council, with the support of the Carnegie Foundation, has recently announced, "a study of the present status of mental disorders," to be directed by the head of the Department of Psychology of one of the leading universities. To indicate the scope and objects of the study, the announcement states that "the present understanding of mental disorders is very imperfect, that there is no satisfactory classification of these disorders, their causes are obscure, remedial measures are frequently ineffective, and measures of prevention are wholly inadequate." Not long ago, it was proposed to a large university, that was about to establish a psychiatric hospital in connection with its medical college, that this should be called the Psychological Institute, and that psychologists should be engaged to attend to the psychological problems presented by the patients, while physicians attended to the physical conditions presented. Psychology is, indeed, taking on viewpoints and methods



of study which will enable it to be more serviceable to the objectives of psychiatry and medicine. Many psychologists are co-operating most effectively with psychiatrists in clinical practice and in scientific studies. These incidents are referred to, therefore, not to excite controversy, but to emphasize the importance of bringing the influence and guidance of the Association to bear on the newer developments in psychiatric interests and practice as on the older. To define the place of non-medical workers in psychiatric practice, and the qualifications required to fit them for their tasks is already receiving attention from the Association, and this year, the Committee on Social Service has made a start with reference to the social worker.

The qualifications of physicians who engage in special forms of practice is just now receiving the attention of several of the medical organizations. This question, so far as it is concerned with psychiatry and psychiatrists, is being considered, and such action as is required taken by our Committee on Psychiatry in Medical Education. The importance of the attention of the Association to developments and projects in medical, nursing and various other forms of organization and advancement can scarcely be exaggerated. Psychiatry is in most schemes of medical organization classed with the narrower specialties such as orthopedics, ophthalmology, and obstetrics. This view is not based on a clear understanding of the character of psychiatric studies and practice, which must necessarily be on broader lines than those of any other branch of medicine. It prevails, however, amongst those who are most influential and active in organized medical and other activities, and works out to the disadvantage of psychiatric usefulness and progress. Attempts to obtain the appointment of representatives of psychiatry on various important committees and other bodies have been met by the statement that medicine was sufficiently provided for by one or two representatives of general medicine, and that it was impractical to admit representatives of all specialties. It is scarcely necessary to say that the interests of psychiatry will receive inadequate consideration from this type of organization. Considerable effort will be required to bring about better understanding and cooperation. It seems, however, to be a task that should continue to receive attention from the Association. It is gratifying to be able to note that during the past year, through the efforts of Dr. Whitehorn.

chairman of the Committee on Research, and of Dr. Meyer, a representative of the Association has been appointed to the medical division of the National Research Council. It seems important that the Association, as the organization of the psychiatric hospitals, should also be represented on the Committee on Grading of Schools of Nursing. The nursing organizations of the country with, I believe, the endorsement of the American Medical Association, have adopted as a policy the elimination of independent schools of nursing at hospitals for the specialties, including psychiatric hospitals. It is unfortunate that the large group of nurses trained in psychiatric hospitals are not organized in a way that would enable them to inform and guide the nurse advocates of this ill-considered proposal. It is contrary to the policy of this Association which has adopted the recommendation of its Committee on Nursing, that the independent schools of the psychiatric hospitals be continued, and further developed so as, more adequately than at present, to provide for the nursing needs of the thousands of psychiatric patients in the hospitals and in the broader psychiatric field that has been opened. Application has been made for the appointment of a representative on this committee, and for a representative of psychiatry on the National Board of Medical Examiners.

The pending revision of the constitution of the Association furnishes an opportunity for considering carefully our own standards, organization and activities. I commend to your attention the report of the Committee on Revision which will be presented at this meeting, and lie over for final action next year. The new constitution should be shaped with reference to the broader opportunities for service and for psychiatric advancement which are now presented. Special attention may, with advantage, be given to the conditions of membership in the Association. Fellows especially, in the estimate of the general medical profession and of the public, should represent what is most reliable in psychiatric practice. Their qualifications should, therefore, be more precisely defined than at present. The question of section organization is also, in view of the development of special interests, viewpoints, and activities in the membership, one that might, with advantage, be given careful consideration.

In the further development of its interests and activities, it may be expected that the Association will find it advisable to enter into

closer relations with various other organizations and groups that are concerned with some of its fundamental problems. The scientific structure of psychiatry rests on foundations that are being built by several sciences. The resources for scientific and educational work that are now becoming available to psychiatry will enable it to secure more ready recognition amongst these sciences than at present. The leadership and responsibility assumed by some of them in tasks for which psychiatry is so much better qualified, indicates the confusion that exists in regard to its place and usefulness. Some progress in establishing relations is, however, being made. A committee of the Association is endeavoring to arrive at understandings with the social sciences and, as already noted, a representative of the Association has been appointed on the medical section of the National Research Council.

Similarly, in its practical activities, the Association has been entering into cooperative relations with other organizations. The achievement of the Committee on Statistics in establishing a nationwide plan of uniform statistics, in cooperation with the National Committee for Mental Hygiene, and the Federal Bureau of the Census is a case in point. This committee has also, during the past year, cooperated with the National Conference on Nomenclature of Disease, in securing a proper adjustment of the accepted classification of mental disorders with the nomenclature proposed by the Conference for general adoption. The Committee on the Legal Aspects of Psychiatry has been cooperating with the American Bar Association and other organizations, and the Committee on Psychiatry in Medical Education and the Committee on Nursing are finding it advisable to keep in touch with other bodies concerned with the same interests as these committees. The joint sessions at the annual meetings with the American Psychoanalytic Association, contribute to an understanding and an integration of psychoanalysis with general psychiatry. A corresponding relationship with the Association for the Study of Epilepsy resulted a few years ago, in a closer union in the form of a permanent section of the Association for the Study of Convulsive Disorders. In medical teaching and in general hospital and out-patient practice, the cooperative relations of psychiatry with other branches of medicine, already indicated, are growing and creating conditions

relating to standards and responsibilities which may with advantage be subjected to study and guidance by the Association.

The Association has, from time to time, engaged in cooperative activities with the National Committee for Mental Hygiene. The policies and program of that committee, which was organized in 1909 through the efforts of Clifford W. Beers, were originally formulated and developed by psychiatrists under the leadership of Dr. Adolf Meyer, and were organized and carried into masterly execution by the late Dr. Thomas W. Salmon. The most important activities of the committee are directed and for the most part, carried out by psychiatrists. Some of its undertakings, notably during the war and in the work on statistics already referred to, have been joint undertakings with the Association. It also cooperated with the Association's Committee on Standards and Policies in a questionnaire survey of the hospitals which could not have been so well done without the assistance given. In its early intensive campaign to raise the standards of hospital treatment, laws relating to mental disorders, and community organization and methods of dealing with the problem, the committee, under the leadership of Dr. Salmon, made a valuable contribution to the advancement of some of the main objects of this Association. In this undertaking, the committee was able to secure the services of some of the ablest members of the Association. This work was engaged in, not solely for humanitarian reasons, as is sometimes stated, but in pursuance of a policy based on the belief that the first step in a sound mental hygiene development should be to secure better standards in the provision and methods employed in dealing with the problem of mental disorders as it was most obviously presented. It was thought that the long established organization and agencies which had developed out of the practical needs of society, furnished the best foundation on which to build. With the rapid and enormous expansion of mental hygiene conceptions and interest, however, and the development of new and more alluring forms of activity, it was felt by those who supplied the funds, that support should be directed to what seemed to them to be more clearly mental hygiene objectives, rather than to clinical studies and treatment. The National Committee has, nevertheless, retained its Division of Hospitals, under the direction of Dr. S. W. Hamilton of Bloom-

ingdale Hospital, who gives part time service gratuitously, but it is without funds. There is, however, some indication that the place, in mental hygiene effort and development, of clinical psychiatry, and of a strong foundation in hospitals and other agencies for the study and treatment of the problems of mental disorders in their clearly discerned forms is now better understood, and that funds for studies and efforts for their advancement will become available. There can be no question that for a task of this character there is no other organization which, by virtue of the character of its membership, its understanding, and its accumulated experience and ability, is so well qualified as this Association. Funds will, however, be required, and, if the Association is unable to secure these, it would seem as though a cooperative program with the National Committee for Mental Hygiene might be considered. Experience shows that the Association might expect to be able to enter into undertakings with the committee under conditions that would avoid any risk to its independence of expression and action, or to the substantial aims and principles to which it has for so long steadfastly adhered. The importance of this, in all the relationships of the Association, can scarcely be overestimated. It should enter into these relationships, as Robert Louis Stevenson says of friendship, "without capitulation."

The central aim of psychiatry, as of all medicine, is prevention. In medicine, organization to this end has taken the form of a definite Department of Preventive Medicine. It is said that a noticeable trend toward prevention began to appear in medical interest during the latter part of the 18th century, and the introduction of vaccination against smallpox opened the way to a rather definite line of effort and progress. In psychiatry, the proceedings of the Association indicate that a rather definite and persistent interest in prevention began to manifest itself during the latter part of the 19th century. In his presidential address in 1899, Dr. Henry Hurd spoke of "the concern of the Association in prevention of insanity and the diseases that lead to insanity." At the meeting of that year, five papers on topics relating to prevention were presented, one by Dr. Richardson, of Boston, with the title, "The Practical Value of Prophylaxis of Mental Disease." The interest then manifested marked a widespread trend, and the beginning

of the mental hygiene movement. Later, when the National Committee was organized, it again found expression in the opportunity presented to psychiatrists in the development of the policies and activities of this committee. Nothing so concrete as vaccination has as yet been presented to point the way of preventive psychiatry. The means to be employed, and the lines to follow are not so clearly defined. A purely medical and psychiatric development for the prevention of mental disorders would seem, however, to be needed. It was necessary to visit a hygiene exposition in Europe to find displayed to the public a list of conditions in modern life—even high buildings were mentioned—that may contribute to the production of mental disorders. Notwithstanding the great public interest in the social and political aspects of the use of alcohol as a beverage, less effort at spreading abroad sound information concerning its effects on the human organism, and the vital issues at stake, is made by psychiatrists in this country than in other countries. The question of preventive psychiatry, to be organized within psychiatry and medicine should, I believe, be considered by the Association. At its very first meeting a "Committee on the Causes and Prevention of Insanity" was appointed. Perhaps the time has arrived when a "Committee on Preventive Psychiatry" should be appointed, for the purpose of bringing together all available information relating to scientifically or empirically determined etiological factors, and of devising measures for dealing with them more definitely and adequately. Reliable information of this character would be of great value to all who are engaged with medical and psychiatric problems. The task is one that can, I believe, hardly be properly or safely left entirely to the mental hygiene organizations.

What I have attempted in this address is to bring into view, (1) the place which the Association has long held in the field of psychiatry, and the service it renders by its organized activities; (2) the great extension of this field, and of developments that have brought to psychiatry and to the Association, new and broader opportunities, tasks and responsibilities, as well as new complexities and difficulties; (3) the need, and, perhaps, a few ways for the continuance and the extension of its service. It can hardly be questioned that, for the secure and sound progress of psychiatry in



America, whether in hospitals or in the broader field, the organized attention of such an organization as the Association is of great importance. The general medical organizations have not, as yet, become sufficiently informed concerning the rudiments of psychiatric hospital administration and practice to be able to furnish safe and sound leadership and guidance to the psychiatric hospitals. Physicians in other departments of medicine are unable to understand the place of hospital administration in psychiatric practice. They do not see how important, in the study and treatment of the patients it is, as Pinel wrote more than a century ago, "to place first, in point of consequence, the duties of a humane and enlightened superintendency and the maintenance of order in the services of the hospital." They believe that psychiatric progress would be advanced if the physicians were relieved of administrative responsibilities, and do not realize that for the social treatment and social adjustment of the patients, which is the objective of all psychiatric treatment, the administration of the hospital is a highly organized therapeutic agency and must be psychiatric throughout. It is equally certain that the attention and guidance of such an organization as the Association will be of infinite advantage in the development of the newer agencies, activities, and interests in psychiatric study and practice. Much will, no doubt, be contributed by the Association through its meetings, its committees, and by means of conferences and section meetings that may be held, not only in connection with its annual meetings, but at other times and places as well, as may be considered necessary. For a long time, however, it has been felt that, in order to carry its organized activities to the degree of usefulness which is aimed at, the Association requires a permanent office and organization, and greater financial resources. Attention has been directed to this need in previous presidential addresses and in committee reports. It should receive the most earnest consideration of all who are concerned about psychiatric leadership for psychiatry, and about adherence to sound principles and standards in psychiatric developments. The Association may, perhaps, have reached a parting of the ways. It is no longer the only national organization in the field of psychiatry. It may, therefore, decide to continue, and en-

deavor to develop further, its organized activities in regard to hospitals and other forms of psychiatric service, or it may decide to leave these to other organizations, and to devote itself exclusively to discussions of the problems of clinical, scientific and educational psychiatry. I am unable to believe that the broader way will not be chosen.

## THE HISTOPATHOLOGY OF THERAPEUTIC (TERTIAN) MALARIA.

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The use of tertian malaria in the treatment of general paralysis and other forms of syphilis has rendered a reworking of its histopathology desirable. The histologic changes which take place during the malaria treatment are of great interest to the neuropsychiatrist and syphilologist. They are of equal interest to the immunologist. In connection with the therapeutic use of tertian malaria, the observation has been made that the malaria plasmodium produces, not infrequently, a negative serology in parietic neurosyphilis without the use of any additional specific antiluetic treatment. It was Kyes<sup>1</sup> 1916, Siegmund<sup>2,3</sup> 1923, Paschkis<sup>4</sup> 1924, Jungeblut and Berlot<sup>5</sup> 1926, Epstein<sup>6</sup> 1929, and others who directed attention to the reticulo-endothelial apparatus or to the system of macrophages in the production of natural immunity. One of the outstanding features of therapeutic or acute tertian malaria consists in the activation of the tissue cell which has been variously designated as resting wandering cell (Maximow), adventitia cell (Marchand), tissue macrophage (Metchnikoff and H. Evans), clasmatocyte (Ranvier and Sabin), histiocyte (Kiyono and Aschoff). In addition to the stimulation of the system of histiocytes, there is an involvement of endothelial cells of capillaries and venules of various organs which are not included in the reticulo-endothelial apparatus, as formulated by Aschoff. It is generally admitted that mononuclear phagocytes detach themselves from the reticulo-endothelial cells of the liver, spleen, and bone marrow and enter the vessels as blood macrophages or blood histiocytes. Whether endothelial phagocytes originate from true capillary endothelial cells, for instance from the endothelial cells of the brain capillaries, is controversial. It will be shown in this study that under the stimulus of the malaria plasmodium other capillary endothelial cells than those lining the sinusoids of the liver

and spleen take part in the production of blood macrophages, observations which were made by Patella<sup>7</sup> 24 years ago and which are confirmed in this study.

It has been assumed by Bruetsch<sup>8</sup> 1927, that activation of the reticulo-endothelial system accompanied by new formation of macrophagic tissue, is one of the many factors which are responsible for the beneficent effect of therapeutic malaria in the treatment of general paralysis. If this be the case, the question arises where in the central nervous system is the mesodermal cell which responds to the malaria plasmodium in a similar way as the reticulo-endothelial cell or histiocyte of the abdominal organs? Until recently the brain was hardly mentioned in connection with the reticulo-endothelial system. One of the reasons to account for this, is the existence of a mechanism in the normal brain which prohibits the access of the acid vital dyes to the cells which are capable of storage. Kubie and Schultz,<sup>9</sup> however, working with the supravital technique, have succeeded in showing the presence of reticulo-endothelial tissue in the normal nervous system. They have found young monocytes scattered among the arachnoidal lining cells, and monocytes and clasmatoocytes in the sheaths of the pial vessels. With the same technique mesodermal phagocytic cells have been found in the perivascular sheaths of the brain matter, and they have been looked upon by Kubie<sup>10</sup> as clasmatoocytes. An attempt was made to substantiate the observations of Kubie and Schultz with material in which the malaria plasmodium was the stimulating agent.

#### MATERIAL.

The material used for this study will be limited to a luetic, but non-general paralytic patient who died of a splenic rupture while under the malaria treatment. Unfortunately, bone marrow, lymph nodes, and omentum were not preserved in this case. In order to make the study complete, tissue of the latter organs had to be used from general paralytic patients who died during the malaria treatment. Brain tissue of general paralytic patients who succumbed to therapeutic malaria was not included in the histologic examination for the following reasons. In the general paralytic brain active changes are going on in the pia-arachnoid

and in the perivascular sheaths of the vessels of the brain cortex, both being crowded with cellular elements—plasma cells and lymphocytes. The question still stands for discussion whether the plasma cells of the paretic brain are transformed emigrated lymphocytes, or whether they originate *in situ* from undifferentiated mesenchymal cells, *i. e.*, from a cell type which is also activated by malaria. Normal mesodermal cells are necessary to study their behavior under the stimulation of the invading malaria plasmodia. A further important cell which responds to the plasmodium is the endothelial cell of the capillaries of the brain cortex. The increased permeability of the capillaries and venules of the cortex which is present in general paralysis points to the fact that changes, if only functional in character, are taking place in these endothelial cells of the paretic brain. This condition might lead in general paralysis to a somewhat different degree of endothelial reaction when stimulated by malaria, in contrast with a normal brain.

#### TECHNIQUE.

Small pieces of tissue were fixed in 10 per cent formalin, 95 per cent alcohol, Zenker's solution, and Helly-Maximow's fixing solution. Paraffin and celloidin sections of the variously fixed tissue blocks were stained with toluidin blue, hematoxylin-eosin, and van Gieson. The method of Ellermann was employed for the histologic examination of the hæmatopoietic tissue (see *Recent Advances in Hematology* by A. Piney, 1927, p. 257). The Prussian blue test of Perls was used for the demonstration of iron.

Alcohol-fixed material, embedded in celloidin and stained with toluidin blue after Nissl, was found to give the best results for the demonstration of the histiocytic reaction and the accompanying intravascular events in the brain and organs. The histologic observations, when not otherwise indicated, were made on tissue treated with this method. When formalin-fixed material was used, the specific tissue changes were less distinct and were obscured in part by the formation of a pigment which was precipitated by formalin. This formalin-pigment is frequently a source of errors in interpreting certain phases of the histopathology of malaria.

## NOMENCLATURE.

To the cells of the reticulo-endothelial system the term HISTIOCYTES or MACROPHAGES was applied synonymously. The cells were referred to as BLOOD HISTIOCYTES or BLOOD MACROPHAGES when found in the blood stream. In the connective tissue they were spoken of as TISSUE HISTIOCYTES or TISSUE MACROPHAGES. In certain organs, such as the spleen and lymph nodes, the term RETICULAR HISTIOCYTES was used designating that these cells had arisen from the reticular cells. The term CLASMATOCYTES in the sense of Sabin, Doan, and Cunningham<sup>11</sup> was avoided, whenever possible, because the observations were made on fixed tissue. In subsequent cases which died during the malaria treatment the supravital technique was employed. It was found that the cells designated as histiocytes or macrophages belonged to the group of Sabin's clasmatoocytes.

The differentiation of the MONOCYTES within the vessels of the fixed tissue encountered the greatest difficulties. Sabin and Doan<sup>12</sup> state that in the fixed smear stained with methylen blue, the cytoplasm of the clasmatoocyte appears as a faintly basophilic thin film in contrast to the dense cytoplasm of the monocytic strain. Discrimination of the two cell types on this basis was uncertain in sections stained with toluidin blue. To designate a cell within the vessels as monocyte, the shape of the nucleus was preferred as criterion. Only cells with a characteristic horse-shoe shaped nucleus, as pictured in the *Textbook of Histology* by Maximow and Bloom, 1930, p. 129, were termed monocytes.

Furthermore, a cell type which made its appearance in great number, both in the tissue and within the blood vessels, was termed BASOPHILIC ROUND CELLS. The latter cells were interpreted as belonging to the group of UNDIFFERENTIATED MESENCHYMAL CELLS. They are present according to Maximow<sup>13a</sup> both in the connective tissue and in the blood stream of the adult organism and are endowed with hemocytoblastic properties. Under the stimulating effect of the malaria the number of these cells was greatly increased, and they were found as mature and immature forms.

The mature form of the basophilic round cells or undifferentiated mesenchymal cells resembled the plasma cell with the exception that the pale area adjacent to the nucleus was absent. From



the mature form there were numerous transition stages to very small types. The smallest and youngest cell was only one-third of the size of a small lymphocyte and consisted of a dense and sometimes eccentrically arranged dark blue nucleus surrounded by a distinct rim of strongly basophilic cytoplasm. This cell was interpreted as a microhemocytoblast (Maximow<sup>12a</sup>). There were intermediate forms with a large dark cytoplasm surrounding a centrally or eccentrically arranged dense nucleus. Later in the development the chromatin of the nucleus assumed the cart-wheel arrangement. In the blood and tissue the immature types occasionally had two small compact nuclei. These cells were regarded as being in the stage of an amitotic cell division. There were also cells with a large nucleus having a loose cart-wheel arrangement of the chromatin and one or two nucleoli. In these cells the nucleus occupied almost the entire body, leaving little space for a small rim of cytoplasm. The basophilic round cells were never found to be phagocytic. For the sake of clearness it must be added that the cells, described here as basophilic round cells, have nothing in common with the basophilic leukocytes or simply termed, "basophiles," of the peripheral blood picture.

#### CLINICAL HISTORY.

Mrs. A. M. S., 61 years of age, was admitted to the Central State Hospital on June 23, 1923, with an uncharacteristic psychosis. She expressed ideas of infidelity and reference, showed suicidal and homicidal tendencies, and was at times euphoristic and hallucinated. She was well oriented in all the fields. Mental deterioration was absent. The patient was the mother of four boys of whom two were dead, two living and well. Miscarriages were denied. The patient stated that she acquired syphilis from her husband, who died of general paralysis in 1927 at the Central State Hospital. Her physical examination revealed nothing of interest. All the reflexes were normal. The pupils were small and equal and reacted feebly to light. On various occasions in 1923 and 1924 the Wassermann reaction of the blood and spinal fluid was strongly positive. Other tests of the spinal fluid were not made.

On December 16, 1926, the patient was inoculated, intravenously, with  $1\frac{1}{2}$  cc. of malarial blood. The strain of tertian malaria had

previously passed through 96 patients and was obtained on August 14, 1925, from a house patient of the Indianapolis City Hospital, who had acquired tertian malaria on a trip to Arkansas. The first rise in temperature to 104° F. occurred on the sixth day after inoculation. On the seventh, eighth, and ninth days there were daily malarial paroxysms ranging between 104° and 105° F. On the tenth day the fever did not rise above 100° F. Respiration was superficial; the patient became pale and restless and complained of generalized pains in the abdomen. On the following day the restlessness continued, and after a chill the temperature went up to 100° F. Toward midnight the pulse dropped from 110 to 60 per minute, and the patient died the next morning. The clinical picture was suggestive of an abdominal complication.

#### AUTOPSY REPORT.

The autopsy was performed two hours after death, while the body was still warm.

*Brain.*—The leptomeninges at the base were transparent. Over the convexity there was a slight thickening of the pia-arachnoid which was a little more marked in circumscribed areas. The cerebral convolutions were of normal size. In the fourth ventricle there were a few granular elevations. At the base of the frontal lobes bulging into the longitudinal fissure there was a small tumor, 3.5 x 3 cm., in diameter. The tumor could be easily shelled out of the depression. The bulb of the right olfactory nerve was adherent to the tumor. The new growth was *in situ* located over the olfactory groove. Weight of the brain: 1140 gm.

*Liver.*—Through the slightly thickened capsule numerous small greyish nodules of the size of a pin-head were discernible. The cut surface was pale. The periportal connective tissue was outlined by greyish streaks resulting in places in the formation of miliary nodules. (Fig. 1.) Weight: 1195 gm.

*Spleen.*—The capsule of the greater part of the anterior surface was thickened and in one place was transformed into a dense hyaline plaque. Along the lower margin of the left portion the capsule was thin and transparent. In this region there was a tear, 6 cm. in length, parallel to the lower margin. There were a few spots of clotted blood along the tear. The organ was moderately enlarged and was firm and brittle. Weight: 220 gm.

Aside from cloudy swelling the remaining organs showed nothing of interest.

*Anatomical Diagnosis.*—Meningioma arising from the olfactory groove. Splenic rupture. Perisplenitis cartilaginea. Mesenchymal reaction in the periportal connective tissue of the liver. Cloudy swelling of the internal organs.

#### HISTOLOGIC OBSERVATIONS.

##### CENTRAL NERVOUS SYSTEM.

*Leptomeninges.*—In numerous circumscribed areas the soft meninges were thickened and transformed into fibrous tissue (luetic fibrosis); in others they were thin and of a normal appearance under low magnification. General paralytic changes, such as an infiltration with lymphocytes and plasma cells, were absent. The portions of the pia-arachnoid which had undergone fibrotic changes, and the areas which were unchanged by the lues were studied separately in their response to the malaria plasmodium.

*Arachnoid.*—With the supravital technique Kubie and Schultz<sup>\*</sup> have demonstrated two mesodermal cell types in the normal arachnoid of the cat. One is the arachnoidal lining cell, and the other is a phagocytic cell which according to the classification of Sabin, Doan, and Cunningham<sup>11</sup> has been interpreted by Kubie and Schultz<sup>\*</sup> in the arachnoid as a monocyte, and in the sheaths of the pial vessels as a clasmatoocyte. Under the stimulation by the malaria plasmodium the arachnoidal lining cell and the phagocytic cell could be differentiated without difficulty. Most of the arachnoidal lining cells of the trabeculæ were normal in appearance. The nucleus, when viewed from the side, was of an elongated, slender form and was surrounded at either pole by a small rim of hardly visible cytoplasm passing off into a fine reticulum. Some of the arachnoidal lining cells retained this unstimulated morphological appearance, although a full-grown malarial parasite was in almost immediate contact with the cell. At other places there was an occasional arachnoidal cell with a lighter and rounded-up nucleus. These cells were regarded as being stimulated, but even then the cytoplasm took little of the basic stain. Against the less active arachnoidal lining cell there stood out distinctly the phagocytic mononuclear cell. (Monocyte and clasmatoocyte of Sabin,

Doan, and Cunningham; tissue histiocyte of Kiyono and Aschoff; macrophage of Metchnikoff and H. Evans.) Fig. 2 shows the contrast between these two cell types. The large body of the tissue histiocyte under the malarial stimulation has taken the stain very readily and numerous vacuoles can be recognized in the pink cytoplasm, while in the non-stimulated arachnoidal cell only the elongated nucleus is visible. Some marks of distinction between stimulated macrophages and stimulated arachnoidal cells were the size and shade of the nucleus, and the position of the nucleus in relation to the whole of the cytoplasm. The round or oval nucleus of the stimulated arachnoidal cell was larger and of a light blue tint when stained with toluidin blue, occupying the center of the cytoplasm and exhibiting a distinct brown nucleolus. On the other hand, the nucleus of the stimulated meningeal macrophage was of a darker shade of blue, smaller, indented, irregular or bean-shaped in outline, and was located toward the periphery of the cell having taken up only a small space of the foamy dark rose cytoplasm. The nucleolus was hardly visible and sometimes not at all. In many places of the arachnoid the stimulated histiocytes were numerous, averaging from four to six to eight in one oil immersion field. (Fig. 3.) In a few arachnoidal foci, consisting of numerous activated histiocytes, there were cells with a double nucleus. Mitotic figures were absent. Only a few macrophages had phagocytized a young, just liberated plasmodium. Macrophages in the arachnoid which had enclosed a red corpuscle could not be found with certainty, in spite of the fact that at some places a mature plasmodium was seen in almost immediate contact with stimulated phagocytic cells within the arachnoidal trabeculae.

*Subarachnoid Space.*—In numerous instances normal and parasitized red corpuscles had found their way into the subarachnoid space. The red blood cells were at times the only cellular elements in the subarachnoid space; frequently, however, they were surrounded and intermingled with groups of stimulated macrophagic cells. An occasional desquamated and engorged arachnoidal cell was also found in the subarachnoid space. Nevertheless, the arachnoidal lining cells could be differentiated from the macrophages by their lighter and larger nucleus and by their faint and sometimes hardly discernible cytoplasm.

*Pia.*—The new formation of tissue histiocytes within the trabecular meshes, together with the increased size of the normally present but now activated phagocytic cells, had led at various places to an increased width of the arachnoidal trabeculæ. The swelling had resulted in a stiffness of the arachnoidal trabeculæ which prevented them from collapsing on removal of the brain. This factor greatly facilitated the separate examination of the arachnoid and pia. Usually, however, the pia was studied in the sulci. It was apparent that the mesodermal cells which were capable of stimulation were situated along and between the walls of small pial vessels. The engorged tissue histiocytes stood out distinctly from the fibroblasts of the pia and from the resting endothelial cells of the pial vessels. Histiocytes were present sometimes as single cells, sometimes in groups from 3 to 15. They were of the same size and showed the same staining reactions as the stimulated histiocytic elements within the arachnoidal trabeculæ. Areas where several small veins were close together showed the greatest stimulation, as though the veins with the content of numerous parasitized red corpuscles were responsible for the degree of activation in the surrounding connective tissue. Many of the tissue histiocytes were of an oblong shape. Numerous parasitized red cells and young plasmodia were outside of the pial vessels and were intermingled with the stimulated phagocytes. Only a very few tissue histiocytes were found which had enclosed a red corpuscle. It appeared as if the stimulated histiocyte of the connective tissue, though the cytoplasm had large vacuoles, was not as apt to take up corpuscular elements as the histiocytic element within the blood vessels. In several highly proliferating foci, consisting of 12 to 20 engorged tissue macrophages, there were a few cells with two nuclei. Mitotic figures were absent. In the same foci there were a few pale blue nuclei surrounded by a small rim of pink cytoplasm. One could hardly escape the impression that these naked nuclei were young histiocytic elements just formed by amitotic cell division. In places where the pia in the sulci was poorly supplied with vessels there was little new formation of macrophagic tissue.

In both *pial veins and arteries* there was a great number of infected red blood corpuscles. Most of the malaria plasmodia were mature, filling the red cells with dark brown bodies when stained with toluidin blue. There were also young plasmodia

swimming free in the blood plasma, and others which had just invaded red cells. The white blood cells were increased within the pial vessels. An attempt was made to make a differential count of the leukocytic picture of the pial veins. The result was approximately as follows: polymorphonuclear leukocytes 34 per cent, blood histiocytes 29 per cent, small lymphocytes 25 per cent, large lymphocytes 4 per cent, cells with a monocyte nucleus 3 per cent, basophilic round cells 5 per cent, plasma cells 0 per cent. It is understood that a differential count made on sections gives only an approximate figure of the cell types which are present in the vessels. Some cellular elements, for instance the myelocytes and monocytes, can hardly be distinguished from each other. On the other hand, the two cell forms which were of greatest interest to us, the blood histiocyte and the basophilic round cell, were well differentiated in the toluidin blue preparation. In the pial veins the great majority of the blood histiocytes had a large, light blue nucleus and were rounded up; others had retained a markedly elongated shape. Most of them had phagocytized young plasmodia and pigment, and a few had enclosed a red cell. A small number were free from ingested material. The smaller the pial veins the higher was the percentage of histiocytes with phagocytosed red cells. Only twice a two-lobed polymorphonuclear leukocyte was found which had enclosed a red cell. The endothelial cells of the larger meningeal veins and arteries were normal. In the venules and capillaries, however, there was considerable endothelial activity. Besides normal appearing endothelial cells there were others with a swollen nucleus surrounded by a pale pink cytoplasm which was protruding into the lumen. The number of white blood cells within the pial arteries was, in general, much less than in the pial veins. Blood histiocytes were of infrequent occurrence in the arteries. When present, they were usually rounded up, but even in the arteries an occasional elongated form was found. Cells with a monocytic, horse-shoe shaped nucleus were more frequently seen in the arteries than in the veins.

*Fibrosed Pia-Arachnoid.*—In the fibrosed, almost avascular pia-arachnoid four distinct cell types could be recognized. The most prominent cell was the engorged tissue histiocyte, easily distinguishable from the arachnoidal lining cell and from the fibroblast. The fourth cell type was a small cell presenting the picture of a naked



lymphocytic nucleus, sometimes round or slightly indented, and occasionally surrounded by a small rim of cytoplasm. This cell was interpreted as Maximow's<sup>32c</sup> amœboid wandering cell. The histiocyte was the dominating cell type, ranging in some places from three to six in one oil immersion field. They were in a stage of great stimulation, some of them having the appearance of Maximow's<sup>32b</sup> histiocytic polyblasts (inflammatory macrophages). The arachnoidal cells also showed evidence of activation in which case there became visible a delicate cytoplasm, sometimes of a net-like appearance. Nowhere could there be found definite transition stages from arachnoidal lining cells to tissue histiocytes. Most of the fibroblasts were unchanged. In a few fibroblasts, however, the cytoplasm stained more than usual, but vacuoles were not noticeable. The small amœboid wandering cell showed relatively little activation. With some reservation it may be stated that a few uncertain transition stages could be observed from this cell to the fully developed tissue histiocyte.

*Brain Cortex.*—Under low magnification the cortex offered a normal appearance. The arrangement of the layers of ganglion cells was intact. Perivascular infiltrations were absent. Paretic iron was not present. Some of the ganglion cells revealed uncharacteristic signs of degeneration, mostly due to fatty changes. The macroglia showed nothing unusual, aside from the average trace of yellow pigment in the cell body. The oligodendroglia exhibited no signs of proliferation. This was particularly well illustrated by three oligodendroglia cells which were found along a longitudinal section of a capillary wall. Within the capillary there was a highly stimulated blood histiocyte with vacuoles, but the three oligodendroglia cells behind the capillary wall were normal looking. The microglia was in general unchanged. There were, however, a few microglia cells in the neighborhood of blood vessels in which the microglial processes made their appearance by taking a faint trace of the toluidin blue stain. In the white matter there were the same conditions as far as the various types of glia cells were concerned.

*Cortical Blood Vessels.*—With the low power nothing abnormal was noted, except that some of the larger and middle-sized vessels of the cortex contained a great number of white blood cells. Examination with oil immersion disclosed a moderate number of capillary endothelial cells with a light blue nucleus which was interpreted as

a sign of stimulation. The great majority of the endothelial nuclei had retained the dark blue aspect. It is noteworthy that the cytoplasm of stimulated endothelial cells with a slightly enlarged and light blue nucleus took very little of the stain. Occasionally, a capillary endothelial cell could be seen detaching itself, entering the blood stream as an endothelial phagocyte or blood macrophage. Fig. 4 seems to illustrate this phenomenon. The nucleus of the stimulated endothelial cell is increased in size, compared with the nuclei of the two resting endothelial cells of the opposite side. The cytoplasm of the detaching endothelial cell has assumed a reddish shade, more so to the right of the nucleus. In the same capillary, to the left of the detaching cell there is a full-grown malarial parasite, slightly out of focus. In some of the smaller cortical vessels, blood histiocytes were present in almost the same number as were the granular leukocytes and the smaller lymphocytes. They were frequently of a markedly oblong shape with a large, light blue nucleus and occasionally with a distinct brown nucleolus. There were a few mature and immature basophilic round cells. Plasma cells were absent. Occasionally, a cell with a monocyte nucleus was also noted. Fig. 5 shows the content of a larger vein from the fifth cell layer of the cortex. To the right there is a blood histiocyte of a highly elongated form. The dark spots within the histiocyte are plasmodia and pigment. Beneath this cell there is another blood histiocyte almost rounded up. The most frequent cell type within capillaries was the blood macrophage containing pigment or plasmodia. Occasionally, a basophilic round cell was also noted passing through the capillaries. Frequently, endothelial cells of capillaries were observed which retained a non-stimulated appearance, in spite of the fact that a mature malarial parasite within a red blood cell was taking up the entire lumen and was in immediate contact with the endothelial cell. In the temporal lobe there was an area in which a few capillaries showed luetic endarteritic changes. In this region the endothelial reaction, due to the stimulating malarial parasites, was less than anywhere else in the brain cortex.

Particular attention was paid to the possibility of any indication of phagocytic activity of the capillary endothelial cells of the brain cortex. In viewing the endothelial cells from the side it was not possible to see an endothelial cell with enclosures, such as red blood corpuscles, young plasmodia, or even malaria pigment, as long as

the cell retained its position in the capillary wall. Mitotic figures on the stimulated endothelial cells were not observed. There were no vacuoles or any other evidence of a latent phagocytic power in the resting capillary endothelium. Iron was absent. In stimulated endothelial cells with a light blue nucleus, occasionally, vacuoles of minute size were noticeable in the faint syncytial cytoplasm.

On the *capillaries* the cytoplasm of the scant, small adventitial cells was hardly visible, *i. e.*, there was little stimulation, and there was no apparent new formation of pericapillary macrophagic cells. On the *præcapillaries*, where the adventitial histiocytes are more numerous under normal conditions, some of these cells were activated to a moderate degree, as evidenced by an enlarged and faintly staining cytoplasm which contained small vacuoles. In the perivascular sheaths of the larger thick-walled *cortical arterioles*, which contain fibroblasts and macrophages, the macrophagic cells were moderately mobilized and exhibited small vacuoles in their easily noticeable cytoplasm. There were approximately eight to ten fibroblasts for one small macrophage in the wall of these larger cortical vessels. In the middle cortical cell layers there was an arteriole with many fibroblasts in its wall. Among these there was one phagocytic cell with a monocyte nucleus which had engulfed a young plasmodium. The activated adventitial macrophages in the cortex seemed to be somewhat more numerous about veins. A detailed description of such a *cortical vein* may be of interest. In the third cell layer of the central convolutions there was a middle-sized vein with a large perivascular phagocytic cell having enclosed two parasitized red blood cells. Close to this cell, in the perivascular space, there was another macrophagic cell with an enclosure consisting of one malaria-infected red cell. The cytoplasm of these phagocytic cells was of a much fainter shade than that of the corresponding phagocytic cells in the pia-arachnoid. On the opposite side of the same vein there were two small perivascular macrophages with eccentric, dark blue nuclei, surrounded by a relatively small but dark rose cytoplasm. These two cells corresponded to small meningeal tissue macrophages in so far as their reaction toward the basic stain was concerned. The largest tissue macrophages in the cortex were found in the perivascular spaces of the lower cortical lamina. (Fig. 6.) Here, the stimulated perivascular phagocytes approached almost the size of the corresponding cells in the pia-arachnoid.

*Subcortical White Matter.*—In the adventitial sheaths of the larger arterioles and veins of the subcortical white matter there was by far a greater number of stimulated tissue macrophages than in the cortex.

Finally, a pathologic finding will be described which was of rare occurrence in this brain. After many slides were examined two small perivascular hæmorrhages were found. In the lower cortical lamina and in the subcortical white matter of the frontal lobes there were two larger veins the perivascular spaces of which were filled with red cells. The extravascular accumulation of blood, by encroaching upon the brain matter, had here resulted in a small necrosis of the surrounding tissue. The wall of the veins seemed to be intact. Intermingled with the perivascular red cells were white cells of the same type and relative number, as found within the vessels. Many of the red cells in the perivascular spaces were invaded by malarial parasites.

*Striate Bodies* (caudate nucleus and putamen).—In the perivascular space of some of the smaller and larger arteries there were numerous stimulated histiocytes. Most of these mobilized phagocytic cells had a large, light blue, and usually eccentrically arranged nucleus. The cytoplasm was of a foamy red tinge, due to many vacuoles. In a single oil immersion field nine of these highly active cells were counted. At other perivascular places of the same vessel there was only one and sometimes none of these engorged cells. Within the arterioles there were relatively few white cells, among which a few blood macrophages were observed. Numerous red cells were invaded by malarial parasites. On the endothelial cells of these larger arterioles there was no activity whatsoever. One of the arteries of the largest type in the putamen was examined for stimulated histiocytes. In the muscular coat of the vessel not a single histiocytic cell was seen. In the adventitia, however, there was an almost continuous line of markedly activated histiocytes arranged in a single file. In some places, where there was ample space, they had rounded up; otherwise, they were of an oblong shape, due to tissue pressure. At one place in the perivascular space of the same vessel there were numerous red blood cells. The latter evidently had made their escape from thin-walled capillary veins (vasa vasorum) of the adventitia. Intermingled with the red cells were a few highly stimulated macrophages and a few lymphocytes.

The macrophages had no enclosures. The microglia in the adjacent tissue was slightly stimulated. In the capillaries, some of the endothelial cells showed signs of an acute stimulation evidenced by an enlarged and light blue nucleus. The great majority, however, had retained the normal aspect. There was no new formation of tissue macrophages behind the capillary walls, and the very few which are normally present showed no stimulation. The microglia distant from vessels was unchanged.

*Pons.*—In the perivascular space of the larger vessels, groups of histiocytes were present. For instance, there was a cross section of a larger arteriole with its accompanying vein, surrounded by a large perivascular space. Between the two vessels in the adventitia there were fifteen highly stimulated pale and vacuolated histiocytes with a faint blue nucleus. Intermingled with these histiocytic elements there was about an equal number of lymphocytes. Malarial parasites and red blood cells were absent in this perivascular space. On the other hand, there were larger veins with numerous parasites and macrophages within the lumen, but there was a striking absence of macrophages in the adventitial sheath. Around the capillaries there was neither stimulation nor new growth of perivascular macrophages.

*Cerebellum.*—Close to a meningeal vein there was a small sub-arachnoidal hæmorrhage. Among the escaped red cells thirteen active histiocytes and three lymphocytes were counted in one oil immersion field. In the underlying brain matter nothing of interest was noted.

*Choroid Plexus of Fourth Ventricle.*—The endothelial cells of the venules of the choroid plexus reacted very readily to the plasmodium, and there were many stimulated endothelial cells with a light blue nucleus. An unusually large number of blood macrophages were present within the veins. There were also numerous activated histiocytes in the delicate adventitial sheaths.

#### HYPOPHYSIS CEREBRI.

The pars anterior of the hypophysis consists of columns of epithelial cells which are supported by a delicate reticular connective tissue. Between the epithelial cells are sinusoids lined with histiocytes (Maximow and Bloom).

In the sinusoids there was a moderate number of rounded-up and elongated, highly phagocytic histiocytes. Frequently, corpuscular elements such as polymorphonuclear leukocytes and immature basophilic round cells were noted within the blood histiocytes, all of which had a light blue nucleus. A few histiocytic lining cells were in the stage of desquamation. They never contained pigment or young plasmodia as long as they retained their anatomical position in the wall of the sinusoids. In general, the reaction of the lining histiocytes to the plasmodium was less than in the liver. Active histiocytes behind the lining wall of the sinusoids were not present. In the sinusoids there was a considerable number of basophilic round cells, most of them of the mature stage. Occasionally, there was observed an immature small basophilic round cell with a dense nucleus surrounded by a highly basophilic dark purple cytoplasm. Plasma cells were absent. A few immature basophilic round cells were seen outside of the capillaries. New formation of large and active histiocytes was entirely lacking in the delicate connective tissue of the hypophysis.

#### LIVER.

In the *periportal connective tissue* there was a great increase of round cells sometimes leading to the formation of miliary nodules. (Fig. 7.) The accumulation of these cells was greatest where the connective tissue about the periportal vessels and bile ducts had retained a loose character. In the broad periportal bands consisting of dense connective tissue new formation of round cells was lacking. Examination with the oil immersion revealed that the great majority of the cells filling the space between the loose periportal connective tissue fibers, were small round cells which in every respect looked like small lymphocytes. In a considerable number, however, the lymphocytic nucleus was surrounded by a smaller or larger rim of strongly basophilic cytoplasm. In these basophilic round cells a pale area adjacent to the nucleus was absent or only slightly indicated. A hasty examination could easily mistake them for plasma cells. The cells were interpreted as belonging to the group of undifferentiated mesenchymal cells (Maximow<sup>23d</sup>), being in a stage of activation. In addition, there were a few cells with the characteristics of a true plasma cell. Mitotic figures were exceedingly rare in the proliferating foci, but several basophilic



cells possessed two widely separated dense nuclei suggesting an amitotic cell division. Intermingled with the basophilic round cells there were a few fibroblasts and an occasional stimulated tissue histiocyte. There was approximately one phagocytic histiocyte with enclosed pigment for about one hundred basophilic round cells. While in some periportal foci most round cells had retained the lymphocytic aspect with no or only little cytoplasm about the nucleus, there were other more proliferating foci in which the great majority of the lymphoid cells had developed into basophilic round cells. It was possible to find various transitional stages of the basophilic cell type in one focus. For instance, there were cells with a small dense blue nucleus surrounded by an even more strongly basophilic cytoplasm consisting of minute dark purple droplets. Other cells had a large, light blue nucleus in which one or two distinct nucleoli were visible. The latter cell had occasionally small vacuoles in the cytoplasm. At other places minute, but distinct dark blue nuclei were found surrounded by a rim of basophilic cytoplasm. The latter cells were interpreted as microhemocytoblasts (Maximow<sup>12a</sup>). There were no cellular accumulations about the central veins, nor were there any proliferating foci of a similar character within the lobules.

*Hepatic Sinusoids.*—The sinusoids were considerably dilated. This facilitated the study of the events in the intratrabecular capillaries. There was a marked activity on the lining reticulo-endothelial (histiocytic) cells of the sinusoids. The great majority of the reticulo-endothelial cells were stimulated, and all transition stages were seen from normal appearing lining cells to free Kupffer cells. In the early stage of stimulation the normally thread-like syncytial reticulum began to enlarge and to stain as a narrow, faint pink band exhibiting very early definite vacuoles. Already in this first stage of activation black pigment granules and malaria plasmodia were present in the cytoplasm. In a more advanced stage of stimulation the cytoplasm of the lining cell assumed at times a triangular shape with the irregular light blue nucleus displaced toward the periphery. In this stage the cell still seemed to maintain its position as a lining cell. Finally, the cytoplasm of the histiocytic lining cell filled the entire lumen of the capillary having enclosed red and white cells, malaria pigment, and plasmodia (Fig. 8). In some instances it was difficult to decide

whether these most highly stimulated cells retained still their normal anatomical position, or whether they were already detached from the capillary wall. At other places some of these highly phagocytic Kupffer cells were seen floating free in the capillaries. In some fields the activation had involved almost all lining cells, and it was difficult to find an unstimulated reticulo-endothelial cell. Mitotic figures were not observed. In vain, a search was made for pericapillary histiocytes. In well-prepared toluidin blue preparations the lining reticulum could easily be seen, and there was a narrow but distinct space between the endothelial lining membrane and the liver cells. The only cellular element which was found in the space between the endothelial lining cells and the liver cells, was an occasional young basophilic cell with a dense blue nucleus. The dominating cell type within the liver sinusoids were highly phagocytic histiocytes or, more specifically termed, Kupffer cells in all stages of activity. A white cell within the liver capillaries, which was also present in great number, was the basophilic round cell. The basophilic cell of the circulating blood resembled the analogous cells in the periportal connective tissue. Even the most primitive forms were seen, consisting of a compact, minute nucleus which was only one-fourth of the normal size of a lymphocyte nucleus, surrounded by a distinct and highly basophilic cytoplasm. In the sinusoids from two to three basophilic round cells were found in one oil immersion field. The rest of the white cells were small lymphocytes, two-lobed granular leukocytes, and a few monocytes. The cellular elements which were phagocytic were stimulated lining endothelial cells and the free Kupffer cells. Only exceptionally, a few minute pigment granules were found in the polymorphonuclear leukocytes and in the scant monocytes. All these observations were made on alcohol-fixed material, stained with toluidin blue. In the hematoxylin-eosin sections the finer cytological details were frequently lost.

In some of the *large veins of the periportal connective tissue* the number of the white cells was so greatly increased that they almost equaled the number of the red corpuscles. The prevailing cell type was the phagocytic histiocyte. Most of them were rounded up, while a small number exhibited an elongated shape. Within these veins, not infrequently, from ten to fifteen histiocytic macrophages could be counted in a single oil immersion field. They were highly phago-

cytic and had enclosed plasmodia and frequently corpuscular elements. Many had a large vesicular nucleus sometimes with a distinct nucleolus. Other cells were so markedly vacuolated that a nucleus could not be made out. Another conspicuous cell type was the basophilic round cell which was present in all stages of maturity. Once, a basophilic round cell was seen in the stage of an amitotic cell division. Cells with a monocyte nucleus were rarely noted. There was a moderate number of small lymphocytes and granular leukocytes. Plasma cells were apparently not present. The lumen of some of the *central veins* was almost entirely filled with small and large histiocytes, among which there were a few basophilic round cells. Other central veins contained only a few white cells.

*Parenchymatous Tissue.*—In general, the liver cells stained well and necrosis of parenchymatous tissue was absent. There were, however, a few isolated areas in which liver cells stained poorly some being without a nucleus. These areas were frequently adjacent to the periportal cellular accumulations. Occasionally, groups of slightly degenerated liver cells were also found within the lobules.

#### SPLEEN.

Of the spleen only formalin-fixed material was available. On account of the large amount of formalin pigment, which was scattered throughout the red pulp and venous sinuses, the finer details of the cellular pathology were difficult to determine. In particular, the cytoplasm of the macrophages and stimulated reticular cells stained very faintly.

*White Pulp.*—The Malpighian bodies did not stand out distinctly. The germinal centers were hardly noticeable. Smaller lymphoid nodules and the sheaths of white pulp around smaller arteries were loosened up, due to an invasion by the red pulp. The Malpighian corpuscles consisted of about an equal number of lymphocytes and plasma cells. Among the latter there were large elements with numerous vacuoles, and amœboid shapes, as well as medium-sized and small types. Most of the plasma cells had the characteristic nucleus with the cart-wheel arrangement of the chromatin. There was also a moderate number of cells with a compact, dark blue nucleus and with or without a pale area adjacent to the nucleus resembling basophilic round cells. Rarely, mitotic figures

were observed on these cells. Within the lymphoid nodules a few stimulated reticular cells were noted. In these activated reticular elements the normally thread-like reticulum or cytoplasm increased in width and at the same time developed phagocytic properties. All transitional stages could be traced from a slightly activated reticular cell, still maintaining its oblong shape, to the free rounded-up form.

*Red Pulp.*—A moderate number of the reticular cells showed signs of stimulation of various degree and were filled with both malaria pigment and numerous black granules which were precipitated by formalin. Scattered among the reticular cells of the splenic cords were numerous plasma cells and basophilic round cells of various maturity. Cells with a monocyte nucleus and small lymphocytes were frequently seen. Polymorphonuclear leukocytes were rare.

*Venous Sinuses.*—The sinuses were much dilated and engorged with red cells. The cytoplasm of many lining reticulo-endothelial cells had large vacuoles, and many lining cells were bulging into the sinuses and appeared to be in the stage of desquamation. In these desquamating cells the large vesicular nucleus was situated in the center and was surrounded by a faint cytoplasm containing numerous large vacuoles. It was interesting to note that in these cells pigment granules were usually not present. There was also very little pigment in the stimulated lining endothelial cells which maintained their normal position. This finding was quite in contrast with the appearance of the lining cells of the hepatic sinusoids which stored pigment even in the early stages of stimulation. Within the sinuses were numerous, free, elongated, and rounded reticular cells acting as macrophages. They were characterized by a large, light blue vesicular nucleus which seemed to be difficult to displace. In many instances this cellular element was loaded with large masses of pigment, and the nucleus still maintained an almost central position. There was also a considerable number of stimulated, free, reticular macrophages which had enclosed corpuscular elements such as red or white cells. A few plasma cells and basophilic round cells, which were non-phagocytic, were also noted in the sinuses. Monocytes and polymorphonuclear leukocytes were rare.

*Blood Vessels.*—The endothelium of larger trabecular veins was frequently lifted up by an accumulation of plasma cells, basophilic

round cells, and lymphocytes. Within the trabecular veins there was a great number of macrophages, plasma cells, basophilic round cells, and lymphocytes. Polymorphonuclear leukocytes were rare. Sometimes large groups consisting of 25 to 50 macrophagic reticular cells were present in the lumen of the veins. They had the tendency to adhere to each other, entangling other white cells and red corpuscles in their meshes. Occasionally, an elongated, entirely unstimulated reticular cell was found floating within the trabecular veins.

#### BONE MARROW.

The framework of the bone marrow consists of an undifferentiated cellular syncytium in which are embedded reticular cells or histiocytes besides numerous free cells. The great majority of the free cellular elements are young and mature types of the myeloid series. There are also the young forms of the red blood corpuscles, the erythroblasts. In addition, the bone marrow contains basophilic cells with hemocytoblastic properties. A cell characteristic of the bone marrow is the megakaryocyte which is scattered evenly in a small number among the other elements. The occasional presence of monocytes and small lymphocytes, the latter cells occurring at times in small accumulations, has also been described. The wall of the sinusoids is formed by histiocytic endothelium (Maximow and Bloom).

Bone marrow from this case was not preserved at autopsy. The material, on which the following observations were made, was obtained from general paralytic patients who died during or immediately after the malaria treatment. Tiny pieces of bone marrow were carefully removed from the vertebræ, hardened in alcohol, embedded in celloidin, and stained with the same methods as the organs. Frequently, it was possible to obtain perfect sections without decalcification. The individual cells were sometimes difficult to distinguish, but there were always areas which were thin enough to permit the study of the separate cell types. While very little is known of the exact cellular composition of the bone marrow of a general paralytic, we have ascertained previously to this study that phagocytic cells are not present in appreciable number in untreated general paralytic patients.

The most outstanding finding in the bone marrow of all the general paralytic patients who died during the malaria treatment was the appearance of large phagocytic cells of macrophagic character. In two general paralytic cases who died on the 10th and 19th days following inoculation, there were approximately one to two phagocytic macrophages in a single oil immersion field. Some of the macrophages had phagocytized young plasmodia and pigment only, while others had ingested from one to three red or white cells. The nucleus was always light blue in color and frequently was displaced toward the periphery. The cytoplasm stained very faintly, and for that reason these cells could easily be overlooked. There were no definite signs of a stimulation of the cells belonging to the myelocyte group. Pigment and young plasmodia seemed to be absent in the myelocytes. The megakaryocytes were present in normal number. Besides numerous basophilic round cells there were a few typical plasma cells. The iron staining pigment in these two cases scarcely exceeded the quantity which may be found in normal bone marrow.

In the bone marrow of a general paralytic who died on the 28th day after inoculation, the number of phagocytic macrophages was much greater than in the two preceding cases. This patient had twenty malarial paroxysms, most of them ranging between 103° and 105° F. Four days after the first dose of quinine was given, he died of a broncho-pneumonia. Under low magnification the eye was attracted by numerous cells which were loaded with yellow pigment. High power magnification showed that these cells were macrophagic elements, the cytoplasm of which was filled with innumerable, coarse, bright yellow pigment granules. In many cells the nucleus could not be seen. In other cells which contained less pigment, the nucleus was crowded to one side. The macrophages were evenly distributed throughout the section, and there were as many as four to six in a single oil immersion field. When stained for iron, these elements were easily noticeable as distinct blue cells in which the iron was deposited in the form of coarse and fine blue granules. A few fine iron granules were also stored in the histiocytic endothelium lining the vascular sinuses. In this bone marrow, immature forms of the basophilic round cells and mitotic figures were more numerous than in the two previous patients who died relatively early in the malaria treatment.



## MESENTERIC LYMPH NODES.

The material used for the following description was obtained from a general paralytic who died on the 19th day after inoculation with malaria. The *sinuses* were markedly dilated. Almost all the fixed reticular cells of the sinuses were transformed into large, rounded-up, reticular macrophages. Fifteen and more of these most highly stimulated macrophagic cells were frequently counted in a single oil immersion field. In spite of the fact that these macrophages contained numerous large vacuoles, they showed little phagocytic activity. Rarely, a few pigment granules or young plasmodia were seen within the cells. Corpuscular elements were almost never taken up by these activated reticular elements of the sinuses. Intermingled with the macrophages there were numerous basophilic round cells in all stages of development. A few lymphocytes and plasma cells were also present. Monocytes were not noted in the sinuses. Most of the *lymph follicles* retained their usual size. A few activated reticular macrophages were present at the margin of the follicles. In the interior, however, they were exceedingly rare. In some of the follicles there were few or no immature basophilic round cells. In other follicles and in particular in the dense *lymphoid tissue of the medullary substance* basophilic cells of all maturity and mitotic figures were more numerous. Once, a basophilic cell was seen in the stage of an amitotic cell division. The dense lymphoid tissue of the medulla was frequently loosened up, and activated reticular cells made their appearance among the lymphoid cells. The plasma cells which were present retained their usual appearance. When stained for free iron and counterstained with alum carmine, the sinuses were outlined as bluish bands, while the lymph follicles stood out as distinct red bodies. High magnification showed a diffusely blue stained cytoplasm of the activated reticular macrophages in which were embedded dark blue granules of various size.

## ADRENALS.

In the *connective tissue of the capsule* there were areas in which one to two active, small or medium-sized histiocytes were present in one field. In other places several fields had to be examined to find a single macrophagic cell. In the vessels of the capsule there were numerous blood histiocytes and basophilic round cells. In the

loose *areolar tissue* about the adrenals there was a considerable degree of stimulation. The activation of the mesodermal tissue was accentuated in those places where red blood corpuscles had escaped from thin-walled veins. In the latter regions all connective tissue cells, including the fibroblasts, showed evidence of an irritation. Many fibroblasts were rounded up, the cytoplasm containing numerous small vacuoles. In these areas the differentiation between markedly stimulated fibroblasts and active histiocytes was difficult, but nevertheless was possible in most instances. It seemed that, in spite of the most marked stimulation, the fibroblast did not become phagocytic.

*Cortex and Medulla.*—The capillaries which pass from the cortex to the medulla empty at the cortico-medullary junction into irregular sinusoidal blood spaces. The endothelial lining cells of these capillaries and sinusoids are in part histiocytic cells and belong to the reticulo-endothelial system. At first sight the large number of white blood cells within the sinusoids and larger veins attracted attention. Only in the hepatic veins the number of white cells was greater. The dominating cell type was the blood macrophage usually having a large, light blue nucleus. Many macrophages were of an oblong shape and harbored young plasmodia and red or white cells. There was about an equal number of intravascular basophilic round cells of all sizes and maturity. The number of basophilic cells in the larger veins and sinusoids of the adrenals was even greater than in the veins of the periportal connective tissue of the liver. The rest of the white cells were small lymphocytes and a few polymorphonuclear leukocytes. There were also a few cells which answered the description of a monocyte. The straight capillaries which pass from the cortex to the medulla were dilated and therefore easy to examine. In many lining endothelial cells of these capillaries the syncytial cytoplasm at either side of the nucleus was slightly enlarged and had taken the basophilic stain in a dark red tone. Ingested material or vacuoles were not noticeable in this stage of stimulation. Most lining cells maintained this degree of activation, and it was difficult to find histiocytic endothelial cells more highly stimulated or in the stage of desquamation. This was in contrast with the histiocytic lining cells of the intratrabecular capillaries of the liver, where in one field all degrees of endothelial activity could be studied. Furthermore, the blood

histiocytes in the cortical capillaries of the adrenals were not as highly phagocytic as the free histiocytes in the liver capillaries. In the wide, irregularly arranged, sinusoids of the medulla, however, there were blood histiocytes which showed the most pronounced signs of phagocytic activity.

Everywhere in the adrenals, but in particular toward the deeper layer of the cortex, an increasing number of basophilic round cells was found both within the capillaries and scattered throughout the delicate reticular connective tissue. The extravascular basophilic cells occurred usually as single cells, and only toward the cortico-medullary junction foci of five to ten basophilic cells were found. Many basophilic round cells were of the immature small type with a dense, dark blue nucleus. In the loose reticular tissue between the chromaffine cells of the medulla, the basophilic round cell was the prevailing cell type. At times, mitotic figures were noted. Tissue histiocytes were almost entirely lacking. Scattered between the chromaffine cells of the medulla, there were also cells with the characteristics of typical small lymphocytes. The medulla of the adrenals was a region of an intense proliferation of basophilic round cells, comparable only to the proliferative foci in the periportal connective tissue of the liver. Changes in the parenchymatous cells of the adrenals were absent.

#### INTESTINES.

*Ileum.*—The structure of the intestines, in particular the distribution of the connective tissue, is in principle similar in all portions. The description of the histologic changes in one portion applies more or less to all of them. The stroma of the mucous membrane of the intestines is a peculiar type of connective tissue, not found elsewhere in the body (Maximow and Bloom). It is made up of a reticular framework of argyrophil fibers in which are embedded fixed reticular elements, probably comparable to those of the lymphoid tissue stroma. In addition, a great number of free cells is present, among which the plasma cell and the lymphocyte are most outstanding. Besides the cell types enumerated, the occasional occurrence of granular leukocytes and myelocytes has been observed.

*Lamina Propria (Stroma) of the Mucous Membrane.*—On the net of capillaries and venulæ about the glandular tissue there was

no apparent endothelial proliferation. Rarely, a swollen endothelial nucleus was found, and even then the cytoplasm about the nucleus did not stain. Intracapillary histiocytes were rare and, when present, were very slightly phagocytic. In spite of the large number of plasma cells which were arranged about loosely built venulæ, an indication of a migration of this cell type into the venulæ was not noted. In general, the reticular cells of the stroma were little activated and did not exhibit phagocytic activity, such as an encroachment of pigment. Only in a few instances the cytoplasm about the nucleus was stained, and very rarely a reticular cell of the stroma assumed all the characteristics of a mobilized macrophage. The plasma cells of the stroma retained the appearance which is known from normal tissue. The number of mitoses in the latter cell type was evidently not increased. Scattered among the plasma cells with their typical cart-wheel arrangement of the chromatin, there were a few immature basophilic round cells easily recognized by the compact, small, dense blue nucleus. The solitary (lymphoid) follicles were unchanged. In the *muscularis mucosæ* there was one stimulated histiocyte in two to four fields. The number of the white cells in the vessels of the *submucosa* was only moderately increased, compared with the vessels of the liver or adrenals. Among the white cells there were small lymphocytes, moderately phagocytic histiocytes, basophilic round cells, and occasionally a cell with a monocyte nucleus. The number of polymorphonuclears was relatively decreased. Frequently, the white cells occurred in small heaps. Once, in the submucosa two large vessels (Fig. 9) were found in which the red blood corpuscles were almost entirely replaced by white cells. High magnification showed that the heaps of cells were made up of phagocytic histiocytes with pale, oval nuclei suggesting that they had arisen from the reticular cells of the stroma of the mucous membrane. The remaining cells were lymphocytes, polymorphonuclears, a few basophilic round cells, and cellular debris. Scattered among the white cells, there was an unusually large number of infected red cells, young plasmodia, and pigment. At one place of the intravascular cellular accumulation as seen on Fig. 9 there was a group of about thirty elongated cells which had retained all the characteristics of reticular cells, as found in the stroma of the mucous membrane. The cells were still

non-phagocytic for both pigment and corpuscular elements. In the loose connective tissue of the submucosa there was about one stimulated tissue histiocyte per field. Basophilic round cells were absent. The tissue mast cells had the usual appearance. In the irregularly arranged connective tissue between the bundles of smooth muscle cells of the *muscularis externa*, there were in places from two to five active histiocytes in one field. Some were found in a perivascular position and others as free tissue elements. Within the capillaries and venules there were moderately phagocytic macrophages. Basophilic round cells were rare. Histiocytes were not found between the separate muscle fibers.

#### PERITONEUM.

An unusually marked activation of the mesodermal tissue had taken place in the serous membrane of the intestines. In the venules with a loose structure of the vessel wall, many endothelial cells had swollen nuclei surrounded by a deeply stained cytoplasm, resembling in some respects activated histiocytic lining cells of the liver capillaries. These stimulated endothelial cells remained strikingly non-phagocytic. Along some of the blood vessels there were rows of large, perivascular mobilized histiocytic elements with pale, oval nuclei. There were areas in which amœboid macrophages were assembled in groups averaging from 10 to 15 and more cells. Mitotic figures were not noted on these tissue macrophages. Along other blood vessels there were lymphocytic elements which were richly intermingled with active macrophages. Basophilic round cells were here absent. In numerous places normal and parasitized red corpuscles had escaped into the loose connective tissue, intensifying the mesodermal reaction. In these areas, tissue histiocytes contained malaria pigment and plasmodia, but very rarely whole corpuscular elements. Intravascular basophilic round cells were uncommon. Once, a mitotic figure was seen on a blood histiocyte. A few mesothelial lining cells which cover the surface of the peritoneum had also participated in the general stimulation. They still could be distinguished without difficulty from the active histiocytes by the faintly staining cytoplasm and the large nucleus with the distinct brown nucleoli.

## OMENTUM.

Small pieces of the omentum from a general paralytic patient who died on the 19th day after inoculation were used for the following description. The findings in the omentum varied, depending on the part which was studied. Nothing unusual was found, when tissue was examined from the *netlike portion* which is poorly supplied with blood vessels and harbors only a few free connective tissue cells. In the portions which consist mainly of *fatty tissue*, the changes were similar to those observed in the subcutaneous adipose tissue, with the exception that tissue histiocytes in the omentum of the general paralytic patient were less numerous than in the subcutaneous fatty tissue of the non-general paralytic case. Once, there was an opportunity to study a *milky spot*. The latter was situated along a vessel and consisted of several hundred actively proliferating cells. About one-half of the cells were histiocytes; some of these were highly phagocytic, the nucleus was pushed to one side, and the faint cytoplasm was filled with numerous large vacuoles, cellular debris, and pigment. The rest of the cells consisted mostly of basophilic round cells which were in all stages of maturity. There were a few cells with a monocyte nucleus and some small lymphocytes. A cell type which was vaguely interpreted as a myelocyte, and a few polymorphonuclear leukocytes were also noted. In another place, a cellular focus was found between several loosely built venules consisting of 30 to 40 cells. In this focus most of the cells were basophilic round cells intermingled with small and middle-sized lymphocytes. Histiocytes were here absent.

In the wide *venulæ* of the omentum the almost exclusive cell type was the blood histiocyte. Most of these had retained a highly elongated form. When stained for iron, the cytoplasm of these histiocytic elements presented a diffuse blue tone in which were interspersed deep blue granules. Some of the *venulæ* in the omentum had assumed a width comparable to venous sinuses, due to an engorgement with red blood cells. In general, it was noted that the endothelial cells of the capillaries of the omentum were less capable of stimulation than the endothelial cells of the *venulæ*.



## LUNGS.

In the normal pulmonary tissue two types of histiocytes or macrophages are present. The first type occurs in the connective tissue about the larger bronchi and vessels, in the intrapulmonary lymphoid tissue, and in the alveolar septa. The second type of cell which in recent years has been identified with the histiocyte, is a polygonal cell which projects from the surface of the septa and has been termed "septal cell" (Lang).

In the *connective tissue about the vessels and bronchi* almost all histiocytes in this elderly individual had stored large amounts of carbon particles, which prohibited a further stimulation by the malaria plasmodium. Several fields had to be looked over to find a histiocyte which showed signs of an acute stimulation, due to the malarial infection. In this region numerous mast cells were present which were unchanged in their morphological aspect.

*Alveolar Septa.*—The outstanding changes in the lungs were going on in the walls of the alveoli. In the interalveolar septa, according to Maximow,<sup>30</sup> there is a large number of histiocytic cells which are endowed with embryonic properties. Some of these cells accompany the dense network of capillaries as perivascular cells, others project into the lumina of the alveoli and have been termed "septal cells." Most of these cells were activated and had assumed the characteristics of small and medium-sized macrophages with innumerable small vacuoles in their cytoplasm. In spite of the fact that these cells contained many vacuoles, they did not seem to be phagocytic at least in the earlier stages of mobilization. In these macrophagic septal cells the round nucleus with one or two brown nucleoli was usually located in the center of the cytoplasm. On the other hand, there were macrophages of the largest type in the alveolar walls which had enclosed malaria plasmodia and corpuscular elements. In some instances it was impossible to ascertain whether these macrophages were extravascular, or whether they were within a unicellular capillary. It was equally difficult to determine whether these cells were most highly stimulated septal cells, or whether they belonged to the true histiocyte group. Very rarely, a mitotic figure was present among the proliferating cells of the septa. Occasionally, a few basophilic round cells of the mature and immature variety were observed among the macrophages in the

septa. A small cellular element which was also found in the interalveolar connective tissue, was a cell with a monocyte nucleus. Desquamation of activated septal cells and migration into the air spaces was of rare occurrence. A few typical dust cells were present in the alveoli. In the interalveolar septa there were a few histiocytic elements which contained carbon particles. Malaria plasmodia or ingested red or white blood cells were not seen in the carbon-laden cells.

*Alveolar Capillaries.*—Particular attention was paid to the alveolar capillaries, both to the single cell capillary, *i. e.*, to the capillary with a lumen of the width of one blood cell as well as to the multicellular capillary; the latter having a lumen that is wide enough to permit more than one row of erythrocytes to pass through at the same time (Olkon and Joannides<sup>14</sup>). In both types of capillaries and venules the white blood cells were very numerous. Approximately one-half of the white cells were vacuolated blood macrophages some having enclosed corpuscular elements (Fig. 10). In some instances medium-sized blood macrophages resembled in all respects extravascular stimulated septal cells. The oval or indented nucleus was large, centrally located, light blue in color, and frequently possessed a distinct, brown nucleolus. The remaining white cells in the capillaries were small and medium-sized lymphocytic elements, basophilic round cells of various size and maturity, polymorphonuclear leukocytes, and cells with a monocyte nucleus. Basophilic round cells were less numerous than in the hepatic sinusoids. Cells with a monocyte nucleus, however, seemed to be more frequent representatives. Striking in the capillaries was the absence of swollen, light blue (stimulated) endothelial nuclei. Desquamating endothelial cells were not observed with any degree of certainty. It must be added that a study of the latter phenomenon encountered the greatest difficulties on the richly branching network of anastomosing capillaries of the alveolar walls. Furthermore, there was no indication of a phagocytic capacity of the capillary endothelium of the lungs.

#### HEART.

In the malaria-stimulated interstitial connective tissue of the heart muscle the histiocytes showed signs of activation, evidenced by the cytoplasm which took the basic stain in a dark rose tone.

Enclosures were not noted in the tissue histiocytes. Once, a focus of perivascular proliferation was found. In this focus consisting of about 30 cells there were large stimulated tissue histiocytes, mature and immature basophilic round cells, a few plasma cells, and fibroblasts. The tissue histiocytes had numerous vacuoles. A few endothelial cells of the capillaries and venules were swollen. Within the veins there was a moderate number of histiocytes.

#### AORTA.

In the adventitia and media there were lymphocyte and plasma cell infiltrations. A few small vessels showed endarteritic changes. These findings were attributed to syphilis, having produced the characteristic lesions of a syphilitic involvement of the aorta. In the examination of the aorta it was, as elsewhere, the main object to define the finer changes which were brought about by the malaria plasmodium. Likewise, it was attempted to show in what way the syphilitic infiltrations were changed in their qualitative composition of cells by the superimposed therapeutic malaria. The perivascular infiltrations, which in untreated patients consist of lymphocytes and plasma cells, contained in this malaria-stimulated case a great number of medium-sized and large active histiocytes with numerous vacuoles, having enclosed malaria plasmodia and pigment. The plasma cells showed more vacuoles than usual. A few immature basophilic round cells were also present. Within the vasa vasorum of the media and within the capillary venules of the adventitia there were numerous white blood cells. The blood histiocytes were in the majority. There was also an unusually high percentage of intravascular plasma cells and of mature and immature basophilic round cells, besides a few small lymphocytes and an occasional polymorphonuclear leukocyte. In some capillary venules of the media and adventitia numerous endothelial cells were stimulated, while in others almost all endothelial cells were normal. In the adventitia there were one to two active tissue histiocytes in one oil immersion field. In other areas, however, several fields had to be examined to find a single activated macrophagic element.

#### PREVERTEBRAL CONNECTIVE TISSUE.

In the loose, irregularly arranged connective tissue between the vertebræ and the aorta, there were scattered numerous red cells

some of which harbored mature plasmodia. These extravascular red cells and plasmodia had led to an intense stimulation of the mesodermal tissue in which even fibroblasts were involved. In a great number of fibroblasts the swollen, light blue nucleus was surrounded by a visible cytoplasm exhibiting a net-like arrangement. Activated tissue histiocytes were numerous. Basophilic round cells were absent.

#### KIDNEYS.

*Cortex.*—In the interstitial reticulated tissue of the cortical portion, there were areas in which one to two small stimulated histiocytes were found in one oil immersion field. The histiocytic cells usually had dark blue nuclei which were surrounded by a heavily stained cytoplasm without vacuoles. In other areas of the cortex there was only one histiocyte in three to five fields. Sometimes it was impossible to decide whether these histiocytes were within thin-walled capillaries, or whether they were tissue elements. The histiocytes were most frequently found in the corner spaces which are formed by three or more adjacent tubules. In almost every oil immersion field one to two mature or immature basophilic round cells were noted in the interstitial tissue. Once, a large basophilic round cell was seen in the stage of amitotic cell division. An occasional typical plasma cell with a pale area adjacent to the nucleus was also present. There were a few small areas in the cortex in which a considerable proliferation was present in the interstitium. Here, from eight to ten loosely scattered mature and immature basophilic round cells were counted in one field. Tissue histiocytes were rare in these places. The glomerular tufts were normal, except for a few histiocytes, basophilic round cells, and infected red cells within the capillary loops. Nothing definite could be made out concerning the behavior of the endothelial cells of the capillaries of the glomeruli because the capillary endothelial cells and the epithelial cells of the capillary loops could not be differentiated with certainty. It seemed, however, as if the capillary endothelial cells of the glomerular tufts showed little, if any, proliferative activity.

*Medulla.*—In the region of the cortico-medullary junction larger areas of proliferation were present. Here, from 25 to 50 and more basophilic round cells were scattered in the loose connective tissue

strands about the arcuate arteries. These connective tissue strands are rich in venules and resemble in many respects the periportal connective tissue of the liver. In this region even the youngest forms of the basophilic round cells were observed. This indicated clearly that these cellular accumulations were actively proliferating foci, and not previously present areas of plasma cell and lymphocyte infiltrations so frequently found in cases of syphilis. On the other hand, in the dense connective tissue of the inner zone of the medullary substance, there were neither tissue histiocytes nor basophilic round cells. In contrast with the veins of the liver and adrenals, there was a comparatively small number of white cells in the larger vessels of the kidneys. The small venulæ rectæ of the medulla, however, were choked with white blood cells. In these venulæ from two to four basophilic round cells were present for one blood histiocyte. The blood histiocytes of the larger vessels of the kidneys were only moderately phagocytic. In general, there was little endothelial activity of the capillaries and venules. The epithelial cells of the convoluted tubules, except for signs of cloudy swelling, were normal. In the medulla a moderate number of collecting tubules was plugged with casts. In the epithelial cells of some of the convoluted tubules of the outer zone of the medulla, pigments granules were present which stained brown with hæmatoxylin-eosin and green with toluidin blue.

#### PANCREAS.

In the dense connective tissue about the ducts and larger blood vessels, there were practically no active tissue histiocytes and no basophilic round cells. Only an intensive search revealed in isolated areas a very few single histiocytic cells of the small type. The fibroblasts and scattered mast cells were entirely unchanged. In the blood vessels there was a small number of histiocytes. Basophilic round cells in the vessels of the pancreas were of very rare occurrence. The islands of Langerhans showed nothing unusual.

#### THYROID GLAND.

Reticular connective tissue is present in the thyroid gland between the follicles. The interstitial partitions between the bands of parenchyma consist of broad septa of dense, collagenous tissue. Nor-

mally, a few lymphocytes and histiocytes are scattered throughout the interfollicular connective tissue.

There was very little endothelial stimulation of the interfollicular capillaries, in the lumina of which an occasional histiocyte was noted. The cells which were found in the spaces between the individual follicles were basophilic round cells. (One to two in a field.) In the interstitial collagenous connective tissue only an intensive search revealed an occasional scattered small histiocyte. In these connective tissue partitions there were a few places which were rich in small veins with loosely arranged endothelial cells. In the latter areas there was considerable mesenchyme activation, as shown by the appearance of numerous basophilic round cells which were assembled about the small veins. On these venules light blue nuclei of stimulated endothelial cells were frequently observed. Within the venules there were numerous histiocytes, some irregularly rounded, others of an elongated shape. A few were highly phagocytic. The small, dark lymphocytic nuclei which are normally scattered through the connective tissue bands were unchanged, *i. e.*, they did not seem to acquire about the nucleus a visible cytoplasm of the basophilic or histiocytic type.

#### STRIATED MUSCULAR TISSUE.

In the normal endomysium between the separate muscle fibers, histiocytes are present which stain deeply with vital dyes (Maximow). Many oil immersion fields had to be looked over to find in the malaria-stimulated endomysium between the separate muscle fibers an isolated activated histiocyte. In the connective tissue about the primary muscle bundles, an occasional single active histiocyte with a light blue nucleus was noted. Striking was the unusually large number of blood macrophages within the smaller veins of the skeletal muscle. They appeared to be more phagocytic than the blood macrophages in the veins of the cardiac muscle, because rather frequently a phagocytosed red cell could be seen. Basophilic round cells were absent in the endomysium and were very rare within the blood vessels of the striated muscular tissue. Perivascular foci of proliferation were not found. Stimulated tissue histiocytes in the perivascular connective tissue were scanty. In both the cardiac and striated muscular tissue, it was evident that blood macrophages were by far more numerous in the veins than in the arteries.



## SUBCUTANEOUS FATTY TISSUE (ABDOMINAL WALL).

In the narrow spaces between the fat cells there was found in almost every field one small, active histiocyte usually with a dark blue nucleus. In other areas the macrophagic elements were less numerous. Fig. 11 represents a large, activated tissue histiocyte of the adipose tissue. The histiocyte is considered to be stimulated because the cytoplasm has taken the basic stain very readily and has assumed a foamy reddish tinge, thus making possible the photographic reproduction of the cell. Not infrequently, the cytoplasm of fibroblasts showed signs of stimulation. Extravascular and intravascular basophilic round cells were present in a moderate number. The cytoplasm and the nucleus of numerous capillary endothelial cells were swollen. The most marked endothelial stimulation in the adipose tissue was found in the capillary venules. Here, activated endothelial cells were seen which resembled endothelial lining cells of the liver capillaries in the first stage of stimulation. Within these venules there were numerous white cells. Fig. 12 shows a capillary venule. In the lumen to the left there is a blood macrophage with a large vacuole and two coarse pigment granules. This cell is followed by a small, dark lymphocyte nucleus and three smaller macrophages. To the extreme right there are three medium-sized lymphocytes and a monocyte with a horse-shoe shaped nucleus. In the larger thick-walled arteries of the adipose tissue, the white cells were less numerous than in the veins. In the arteries several distinct monocytes were seen besides a moderate number of cells which could be interpreted as myelocytes. A few elements of the macrophagic group and a few basophilic round cells were also present. In the arteries the macrophages were usually little phagocytic and possessed a small, dark blue nucleus. There was no other organ where cells with a monocyte nucleus were found with such a distinctiveness as in the vessels of the subcutaneous fatty tissue. A few of the monocytes were phagocytic for plasmodia; the great majority was free from enclosures.

## DISCUSSION.

The cellular response of the connective tissue to the malarial infection involves primarily the two groups of histiocytic phagocytes: first, the specific endothelia of the liver, spleen, lymph nodes, and bone marrow; and secondly, the normally less active phagocytes

of the connective tissue. The histiocytes of the first group are frequently liberated from their local point of attachment and enter the blood stream, where they reach the highest degree of phagocytic activity toward the invading malaria plasmodium. Intensive search did not reveal any indication of a migration of activated histiocytes of the connective tissue into the capillaries. The intravascular histiocytes in therapeutic malaria have been found to be derivatives of histiocytic lining cells and of certain capillary endothelial cells. They seem to correspond to Mallory's<sup>18</sup> "endothelial leukocytes," first observed in typhoid fever in 1898. The vacuoles of the histiocytic macrophages have been frequently misinterpreted as a sign of degeneration. In the light of current hematology they are an expression of active, hungry cells.

It seemed important to ascertain whether the specific endothelium alone takes part in the production of blood macrophages, or whether other endothelium plays a rôle in the endothelial leukocytic apparatus. Fig. 4 which represents a detaching endothelial cell in a capillary of the brain cortex, seems to show rather conclusively that capillary endothelium which does not belong to the group of histiocytes can become, under pathologic conditions, the source of intravascular endothelial phagocytes. From a developmental point of view this seems quite possible, since between histiocytic lining cells of sinusoids and common endothelial cells of larger vessels there are probably transitional forms which still might be endowed with some of the histiocytic properties. It appears from these observations as if the capillary endothelial cell of the brain cortex belongs to this intermediate group. To include the capillary endothelial cell of the brain cortex in the system of the histiocytes would efface the sharp limits of the "system of histiocytes," which should remain a strictly limited term. That the capillary endothelial cell of the brain cortex is different from the histiocytic lining cell of the liver capillaries can easily be recognized from the behavior of the cytoplasm under the effect of stimulus by the malaria plasmodium. The cytoplasm of the histiocytic endothelial cell of the liver capillaries takes the basic dye in the first stage of stimulation, exhibits large vacuoles, and becomes phagocytic. The cytoplasm of the endothelial cell of the brain capillaries, although markedly stimulated, takes very little of the stain, shows only a few hardly visible vacuoles, and remains nonphagocytic until the cell becomes entirely detached

from the vessel wall. An attempt was made to show a similar endothelial proliferation for the capillaries of other organs. Such convincing pictures of desquamating capillary endothelial cells as seen in the brain cortex could not be obtained in other organs. A more important source of intravascular endothelial phagocytes than the true endothelial cells or certain capillaries is found in the endothelial cells of the capillary venules of almost all the organs. In some connective tissues there is a type of venule which possesses a wall of loosely arranged endothelial cells. In these venules many tailed histiocytes were noted. In the omentum and more so in the serous membrane of the intestines there were dilated venules with stimulated endothelial cells which reacted almost like the histiocytic lining cells of the liver. In these venules after the desquamation of an endothelial cell one might gain the impression that the lumen was in open communication with the surrounding tissue. Endothelial cells of vessels larger than capillaries and small veins were never seen to take part in the formation of endothelial leukocytes, *i. e.*, blood histiocytes.

A question to be considered is whether all the blood histiocytes are of the aforementioned origin. It is impossible from the study of fixed tissue to determine whether monocytes and myelocytes of the blood stream are transformed during acute malaria into phagocytic cells resembling blood histiocytes. Even blood histiocytes which are derived from the reticulo-endothelium show morphological differences when stained with the supravital technique. In a general paralytic patient who died on the 28th day following inoculation, and four days after the first dose of quinine was given, a supravital preparation was made at autopsy from the content of a vein of the cut surface of the spleen. The autopsy was made two hours after death, while the body was still warm. The granular leukocytes were alive, the nuclei were unstained, and the cells were moving actively through the field. In this preparation there were two types of clasmotocytes (Sabin). One which was present in a relatively small number was a stimulated clasmotocyte with large orange-colored vacuoles of various size, but almost free from malaria pigment (Fig. 13). The other clasmotocyte was heavily loaded with coarse, black pigment granules which were intermingled with a few small vacuoles of a lemon shade. The histologic examination of the spleen afforded the possibility to trace back the origin of these two

types of clasmatoocytes. In the fixed tissue it was noted that the reticular cell of the splenic stroma was involved in the phagocytosis of pigment, and the clasmatoocyte which was loaded with pigment granules was interpreted as being derived from the reticular cell. The histiocytic lining cell of the sinuses, on the other hand, exhibited in the sections numerous large vacuoles, but was usually free of phagocytosed pigment and other enclosures. The histiocytic lining cell was suspected of having given rise to the clasmatoocyte with the large orange-tinged vacuoles of Fig. 13. From the study of the blood histiocytes in fixed tissue, it seemed as if the histiocytes of the individual organs have their own characteristics and are, to some degree at least, of local origin. That is to say, most histiocytes in the hepatic veins had originated in the liver, and the greater number of histiocytes in the veins of the brain cortex were derived from the endothelium of the cortical capillaries and were not carried to the brain from other regions of the body.

There were marked differences in the numerical distribution of blood macrophages in the various regions of the vascular system. It was apparent that of all the veins the hepatic vein contained the highest percentage of macrophages. Within the branches of the hepatic vein there were present at places from 10 to 15 histiocytic macrophages in a single oil immersion field, matted together with filaments of fibrin. The unequal distribution of macrophages raises the question, why only rarely histiocytes are present in peripheral blood smears which are made during acute malaria. In spite of their presence in large numbers in the veins of the internal organs, only by rare chance will a tailed histiocyte (Fig. 14) be found in a smear from the blood of a finger. In comparing the content of the blood vessels of the skin and subcutaneous tissue with the content of the vessels of the internal organs, such as liver, adrenals, and brain, it becomes evident that the blood picture of the peripheral blood represents only faintly the intravascular events in the internal organs. In obtaining peripheral blood, punctures are made in the skin and superficial subcutaneous tissue which are poorly supplied with capillary venules and small veins. If, in addition, the scalpel strikes an artery, and a differential count is made from such a drop of blood consisting mostly of arterial blood, the result will be a mere shadow of what a differential count from a vein of the liver would reveal. That the peripheral blood is of little avail in

judging the degree of an existing blood histiocytosis in the internal organs was also found by Simpson,<sup>16</sup> in his study on "*The experimental production of macrophages in the circulating blood.*" Likewise, Kiyono has noted that the number of the macrophages in the peripheral blood is very small even at periods when the cells are being poured in immense numbers into the circulation, constituting 90 per cent of the white cells present in the right ventricle.

The highly elongated blood histiocyte (Fig. 14) of the peripheral blood, besides the possibility of having been carried to the skin from the internal organs, has very likely originated from the endothelium of a capillary venule of the subcutaneous tissue.

Throughout the study special attention was directed to the question whether endothelial cells of the capillaries and capillary venules become phagocytic while still in place. Nowhere could I observe an endothelial cell becoming phagocytic for pigment, young plasmodia, or red cells. It was found that even the histiocytic lining endothelial cell of the hepatic sinusoids in its unstimulated stage was non-phagocytic, but that a very slight activation made this cell phagocytic while still being anchored in the capillary wall. In the sinusoids of the hypophysis and adrenals the histiocytic lining cell became phagocytic only after it had entered the circulating blood. The same was true for the capillary endothelial cell of the brain and other organs. Similar observations as to the absence of pigment in endothelial cells have been made by Dürck<sup>17</sup> in patients who died early in the disease of natural malaria. In three patients who succumbed to an estivo-autumnal malarial infection, Barker,<sup>18</sup> using alcohol-fixed tissue, saw in the brain and kidneys a few capillary endothelial cells becoming phagocytic for pigment. On the other hand, in many instances where malaria pigment has been reported as being present in capillary and other common endothelium, the malaria pigment has unquestionably been confused with the so-called formalin pigment. When formalin-fixed material is used, the tissue is peppered with a black granular precipitate. The formalin pigment is in many respects similar to the malaria pigment (Hueck<sup>19</sup>). The formation of formalin pigment is particularly abundant in malaria and other pathologic conditions where a great number of red blood corpuscles are destroyed.

The activation of the histiocytic phagocytes of the connective tissue was less obvious. The histiocyte of the connective tissue, in

spite of being present in considerable numbers either as single stimulated cells or in small groups, might easily be overlooked unless particular attention is directed to this cellular element. The histiocytic reaction in the connective tissue of the organs showed marked variations, depending on the number of this cell type present under normal conditions in various regions of the body.

The brain, for obvious reasons, was the organ of greatest interest and will be considered first. The leptomeninges were found to be in a state of marked macrophagic activation. There were few connective tissues of the body in which such a great number of histiocytic macrophages were noted. A similarly great number of tissue macrophages was present only in the milky spots of the omentum and in the alveolar septa of the lungs. In the leptomeninges the observations of Kubie and Schultz<sup>9</sup> were verified as to the presence of two types of mesodermal cells. With distinct clearness it could be seen that it was the resting histiocytic element of the arachnoid and pia which was activated and transformed into an active histiocytic polyblast or inflammatory macrophage. The arachnoidal lining cell remained more or less inert toward the invading malarial parasite. Although the arachnoidal cell showed signs of stimulation, it reacted similarly to a fibroblast and was seemingly not transformed into a phagocytic histiocyte. The stimulation and new formation of tissue histiocytes in the arachnoid was particularly striking, because this portion of the meninges is poorly supplied with blood vessels. In the arachnoid, the distribution of the histiocytes was usually of a diffuse character and for no evident reason was more marked in some areas than in others. There were regions where the histiocytic reaction was slightly developed and sometimes completely absent. Occasionally, an engorged tissue histiocyte of the arachnoidal trabeculae was seen migrating into the subarachnoid space. Analogous conditions are known in the omentum where Maximow has observed histiocytes migrating through the mesothelial layer into the serous cavity. In the pia, the centers of greatest histiocytic proliferation were in regions richly supplied with small blood vessels. Infected red cells and young parasites which had escaped from thin-walled pial vessels were at times intermingled with the macrophagic cells of these proliferative foci.

The question as to the origin of the activated histiocytes of the leptomeninges is of some importance. In some regions the macro-



phages were so numerous that one was almost justified to speak of a macrophagic meningitis. It appeared as if most of the engorged histiocytes were activated forms of elements which are present in a resting stage in the normal meninges. When they were newly formed, they seemed to arise from other histiocytes by the process of amitotic cell division.

In contrast to the immense number of macrophages in the leptomeninges was the scant number in the connective tissue of the brain matter. It should be emphasized that stimulation as well as new formation of perivascular phagocytes in the adventitial sheaths of the brain cortex was less than in most connective tissues of the internal organs. Moreover, the degree of the histiocytic response varied in different regions of the nervous system. In the subcortical white matter, and in the striatum, and in the pons, activated perivascular histiocytes were more numerous than in the cortex. In the striatum and in the pons, the number of perivascular macrophages was greatest about the large vessels which are supplied with vasa vasorum.

In addition to the perivascular macrophages (Kubie<sup>20</sup>), the microglia has been identified in recent years with the reticulo-endothelial system (de Asúa<sup>21</sup>). The Spanish authors bring evidence to show that the microglial cells are the phagocytic elements of the brain and, furthermore, that they are identical with the phagocytes of the whole body. In view of such an immense response of the reticulo-endothelial system as occurs in therapeutic malaria, it was expected that the microglia would also take part in this reaction. Strikingly, the microglia as a whole remained unchanged. Adjacent to capillaries in which considerable endothelial activity was taking place, a few microglial cells were found in which the processes became visible. In these instances one is probably justified to speak of a slight stimulation of individual microglial cells, being in the very first stage of the transition to the rounded-up and phagocytic forms. In the brain tissue proper, distant from vessels, cells were not noted which had any resemblance to an active macrophagic phagocyte.

In the periportal connective tissue of the liver, it became evident that another cellular element besides the histiocyte was activated by the invading malarial parasite. This cell was the undifferentiated mesenchymal cell of embryonic character which, according to Maxi-

now,<sup>281</sup> is scattered throughout certain connective tissues of the adult organism. This cell gave rise to numerous basophilic round cells found in all stages of maturity, probably endowed with hemocytoblastic properties. In the periportal connective tissue of the liver, this highly proliferating cell type formed smaller and larger cell accumulations. The cell was also present in the hepatic sinusoids, and as a very immature and intensely basophilic element in the space between the sinusoidal lining endothelium and the liver cells. A similar mesenchymal proliferation as in the periportal connective tissue of the liver took place in the medullary portion of the adrenals and in the kidneys, where a greater number of basophilic round cells of varied maturity were present. In the adrenals, the cells were more loosely arranged than in the liver where they formed dense foci. In both liver and adrenals one gained the impression that during therapeutic malaria embryonic happenings were repeated. The basophilic round cells were particularly observed in organs which possessed a delicate reticular connective tissue. Whenever they were present in the interstitial tissue, they were also a frequent cell type within the capillaries and the veins. Notably in the pia-arachnoid and in the brain matter itself they were present only as occasional intravascular elements.

One connective tissue, the alveolar septa of the lungs, deserves particular mention. The interalveolar septa were slightly thickened, mainly due to an activation and increase of the small mesodermal cells which accompany the capillaries. A great number of these cells were transformed into tissue elements resembling small and medium-sized macrophages. In the lungs the interesting observation was made that the tissue histiocyte which was loaded with carbon particles was incapable of further stimulation by the malaria plasmodium.

In the loosely arranged connective tissue of the organs there was always some degree of histiocytic stimulation, which at times was intensified by red cells and young parasites which had escaped from thin-walled vessels into the tissue. In regions, however, where the interstitial tissue had a dense collagenous character, for instance in the pancreas, a histiocytic response was not found.

Another type of connective tissue which was found to be rich in scattered, activated tissue macrophages was the subcutaneous fatty tissue.

The activation and new formation of macrophages in the organs of the reticulo-endothelial system (spleen, liver, and bone marrow) should be considered separately from the histiocytic reaction in the various connective tissues of the body.

In the spleen, the stimulation of the reticular cells and their transformation into highly phagocytic reticular macrophages had led to a condition to which the term "new formation of macrophagic tissue" can best be applied. A similar condition was present in the sinuses of the lymph nodes, where the fixed reticular cells were transformed into macrophages. In both instances one is not dealing with more or less scattered macrophages as in the various connective tissues, but with a massive accumulation of cells assuming, particularly in the spleen, the function of phagocytic tissue.

In the liver, in which a high degree of phagocytic activity was present, new formation of active histiocytes was again more of the diffuse type and took place in the specific endothelium of the hepatic sinusoids. A great number of the histiocytic lining cells of the intratrabecular sinusoids were activated and were in the stage of transformation into highly phagocytic Kupffer cells; some remaining anchored in the capillary wall and others being discharged as blood histiocytes. The increase in the number of Kupffer cells was brought about mainly by the transformation of resting lining cells into free Kupffer cells and not, as might be expected, by mitotic cell division.

In the bone marrow, the shift among the various cell types taking place during the malarial infection was difficult to interpret. The appearance of large phagocytic cells, which seemed to increase in number with the duration of the malaria, was the outstanding feature.

#### SUMMARY.

1. The immediate tissue reaction of the body to the malaria plasmodium consists in a stimulation of the reticulo-endothelial apparatus (system of histiocytes), leading to a new formation of macrophagic tissue in various organs. Both the specific endothelia of the liver, spleen, lymph nodes, and bone marrow; and the histiocytes of the connective tissue take part in the stimulation.

2. In therapeutic malaria the blood histiocytes are mainly derivatives of the specific endothelium. To a minor degree common

capillary endothelium is engaged in the formation of intravascular endothelial phagocytes. This has been established for the endothelium of the capillaries of the brain cortex and for the endothelial cells of the capillary venules of certain connective tissues.

3. By means of the supravital technique, it has been found that the intravascular macrophagic phagocytes are clasmatocytes in the sense of Sabin, Doan, and Cunningham.

4. The capillary endothelial cells, although they show signs of stimulation, do not become phagocytic while they retain their anatomical position in the vessel wall.

5. Besides involving the histiocytes there is an activation of the undifferentiated embryonic mesenchymal cells.

6. The fibroblast, the mesothelial cell, and the histiocyte are distinct types of cells. While both the fibroblast and the mesothelial cell are also capable of stimulation, they still can be distinguished from the active histiocyte in malaria-infected tissue.

7. In the nervous system the macrophagic response has been greatest in the leptomeninges. In the arachnoid the malaria-stimulated histiocyte stands out distinctly from the less active arachnoidal lining cell.

8. In the adventitial sheaths of the vessels of the brain cortex the mesodermal phagocytes are only slightly stimulated. About middle-sized and large cortical vessels a small increase in the number of macrophages has been found. In the perivascular spaces of the large vessels in the white matter, and in the striatum, and in the pons, stimulated histiocytes are more numerous. The small mesodermal elements along the capillaries of the brain cortex have not been seen to be activated.

9. The microglia, as a whole, does not take part in the general reaction of the reticulo-endothelial system.

10. Therapeutic malaria produces an activation of the mesodermal tissue in which the stimulation of the histiocytes and the activation of the undifferentiated mesenchymal cells are outstanding features.

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## BIBLIOGRAPHY.

1. Kyes, P.: The natural resistance of the pigeon to the pneumococcus. *J. Infect. Dis.*, 1916, Vol. 18, 277.
2. Siegmund, H.: Reizkörpertherapie und aktives mesenchymatisches Gewebe. *Münch. med. Wschr.* 1923, Nr. 1.
3. Siegmund H.: Untersuchungen über Immunität und Entzündung. *Verh. dtsch. path. Ges.* 1923, 114.
4. Paschkis, K.: Zur Biologie des retikulo-endothelialen Apparates. Kritische und experimentelle Studien zur Funktion und zur Blockadefrage. Retikuloendothel und Immunkörperbildung. *Ztschr. f. d. ges. exper. Med.* 1924, Vol. 43, 175.
5. Jungeblut, C. W., and Berlot, J. A.: The rôle of the reticulo-endothelial system in immunity. *J. Exper. Med.* 1926, Vol. 43, 613.
6. Epstein, Emil: Beitrag zur Theorie und Morphologie der Immunität. Histiocytenaktivierung in Leber, Milz und Lymphknoten des Immuntieres. (Kaninchen). *Virchows Arch. f. path. Anat.* 1929, Vol. 273, 89.
7. Patella: Cited by Aschoff, L.: Die Krankheiten des Blutes und der blutbildenden Organe, herausgegeben von A. Schittenhelm. Verlag von Julius Springer. Berlin 1925. Zweiter Band. Seite 490.
8. Bruetsch, W. L.: Ein Beitrag zur Wirkungsweise der Impfmalaria auf den histopathologischen Prozess bei progressiver Paralyse. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 1927, Vol. 110, 713.
9. Kubie, L. S., and Schultz, G. M.: Vital and supravital studies of the cells of the cerebrospinal fluid and of the meninges in cats. *Bull. Johns Hopkins Hosp.* 1925, Vol. 37, 91.
10. Kubie, L. S.: A study of the perivascular tissues of the central nervous system, with the supravital technique. *J. Exper. Med.* 1927, Vol. 46, 615.
11. Sabin, F. R., Doan, C. A., and Cunningham, R. S.: Discrimination of two types of phagocytic cells in the connective tissues by the supravital technique. *Contrib. to Embryology*, No. 82, Publication No. 361 of the Carnegie Institution of Washington. 1925.
12. Sabin, F. R., and Doan, C. A.: The relation of monocytes and clasmocytes to early infection in rabbits with bovine tubercle bacilli. *J. Exper. Med.* 1927, Vol. 46, 635.
13. Maximow, A.: Bindegewebe und Blutbildende Gewebe; in v. Möllendorff's Handbuch der mikroskopischen Anatomie des Menschen. Zweiter Band. Die Gewebe. 1927. 13a—p. 529; 13b—p. 530; 13c—p. 255; 13d—p. 297 and 546; 13e—p. 454.

14. Olkon, D. M., and Joannides, M.: The capillary circulation in the alveolus pulmonalis of the living dog. *Arch. Int. Med.* 1930, Vol. 45, 201.
15. Mallory, F. B.: A histological study of typhoid fever. *J. Exper. Med.* 1898, Vol. 3, 611.
16. Simpson, M. E.: The experimental production of macrophages in the circulating blood. *Journ. of Medical Research.* 1922, Vol. 43, 77.
17. Dürck: Cited by Seyfarth, C.; in Henke und Lubarsch, *Handbuch der speziellen pathologischen Anatomie und Histologie.* Erster Band. 1926, p. 197.
18. Barker, L. F.: A study of some fatal cases of malaria. *The Johns Hopkins Hospital Reports.* 1895, Vol. 5, 221.
19. Hueck, W.: Pigmentstudien. *Ziegler, Beiträge z. path. Anat. u. zur allg. Pathologie.* 1912, Vol. 54, 68.
20. de Asúa, F. J.: Die Microglia (Hortegasche Zellen) und das retikulo-endotheliale System. *Ztschr. f. d. ges. Neurol. u. Psychiat.* 1927, Vol. 109, 354.

#### DESCRIPTION OF PLATES.

##### PLATE 1.

- FIG. 1. Piece of the fresh cut surface of the liver. The periportal connective tissue is outlined by grey streaks and miliary nodules. Unstained.  $\times 1\frac{1}{2}$ .
- FIG. 2. Arachnoid. Stimulated tissue histiocyte with numerous vacuoles between two inactive arachnoidal lining cells. Toluidin blue.  $\times 1280$ .

##### PLATE 2.

- FIG. 3. Arachnoid. Group of tissue histiocytes. The cells are highly stimulated and have assumed the appearance of Maximow's histiocytic polyblasts (inflammatory macrophages). There is one two-lobed polymorphonuclear leukocyte among the histiocytes. Toluidin blue.  $\times 1600$ .
- FIG. 4. Brain Cortex. Capillary of the fourth layer. Endothelial cell regarded as detaching itself and entering the circulating blood as endothelial phagocyte (blood macrophage). On the opposite side there are the nuclei of two resting endothelial cells. Toluidin blue.  $\times 1600$ .

##### PLATE 3.

- FIG. 5. Brain cortex. Vein in the fifth layer. In the lumen there is a highly elongated blood histiocyte having enclosed pigment and parasites. Beneath the tailed cell there is an almost rounded-up blood histiocyte. Toluidin blue.  $\times 1000$ .
- FIG. 6. Brain cortex. Moderately activated tissue histiocyte without vacuoles in the perivascular space of two adjoining vessels in the fifth cortical layer. Toluidin blue.  $\times 1280$ .





FIG. 1.

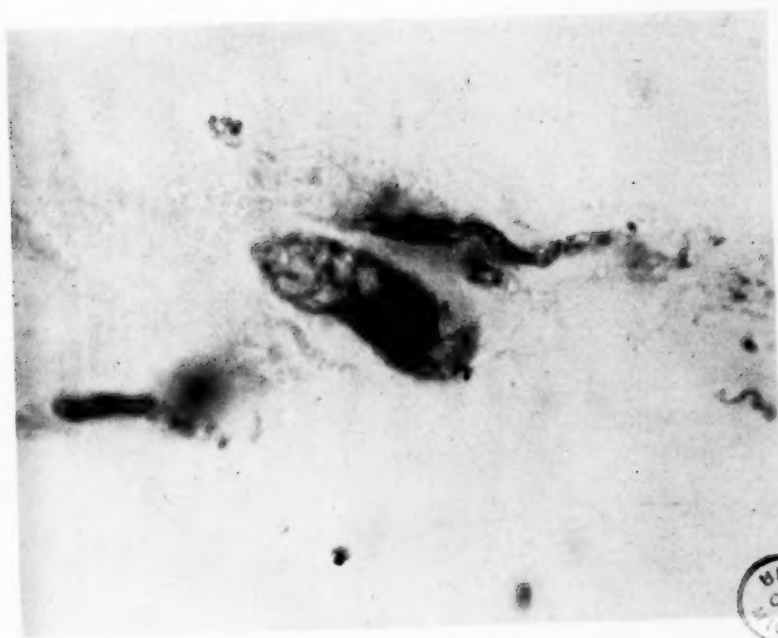


FIG. 2.

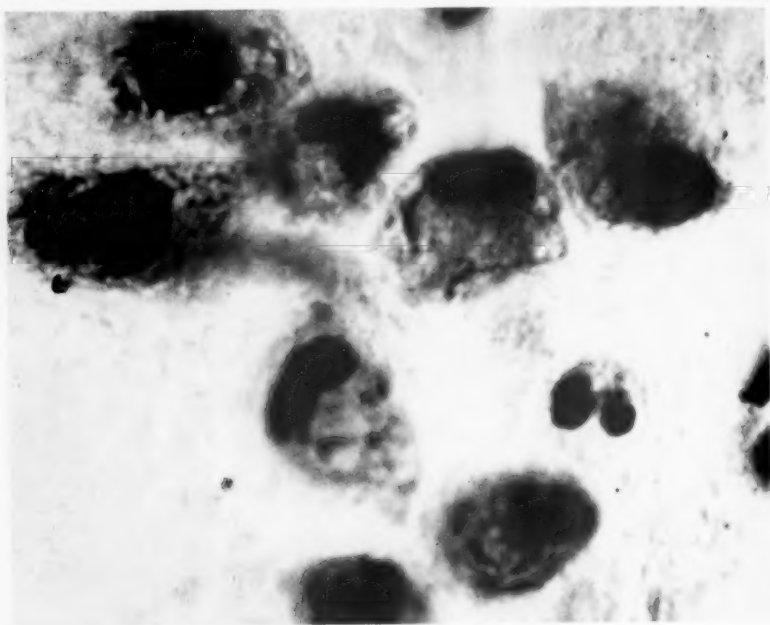


FIG. 3.



FIG. 4.

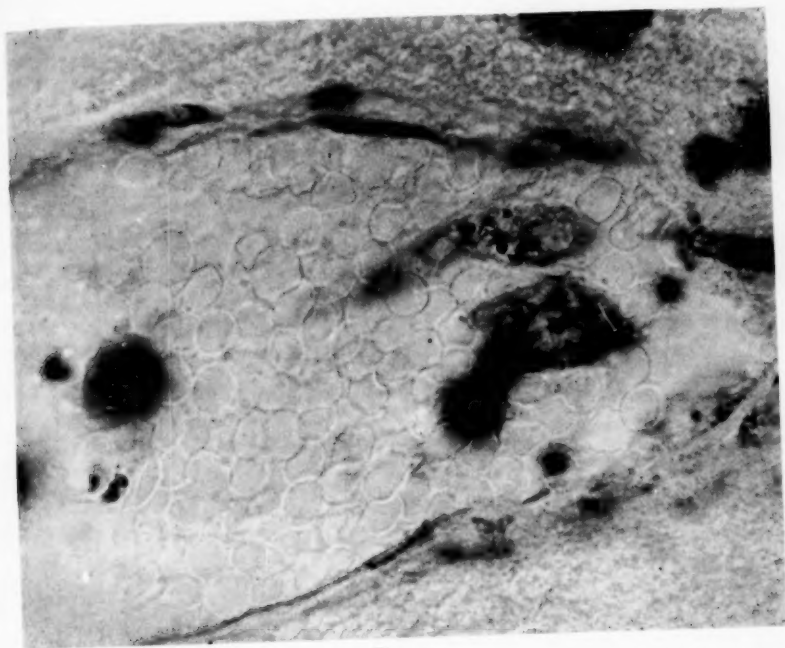


FIG. 5.



FIG. 6.



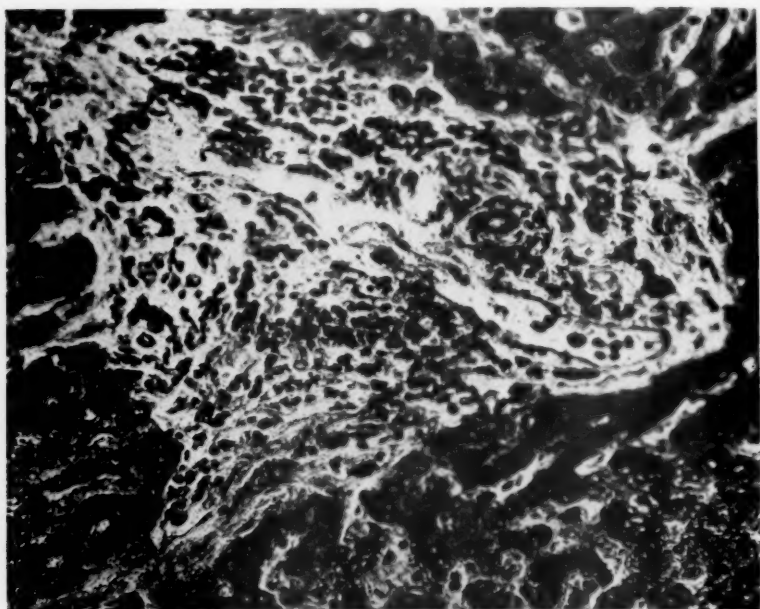


FIG. 7.

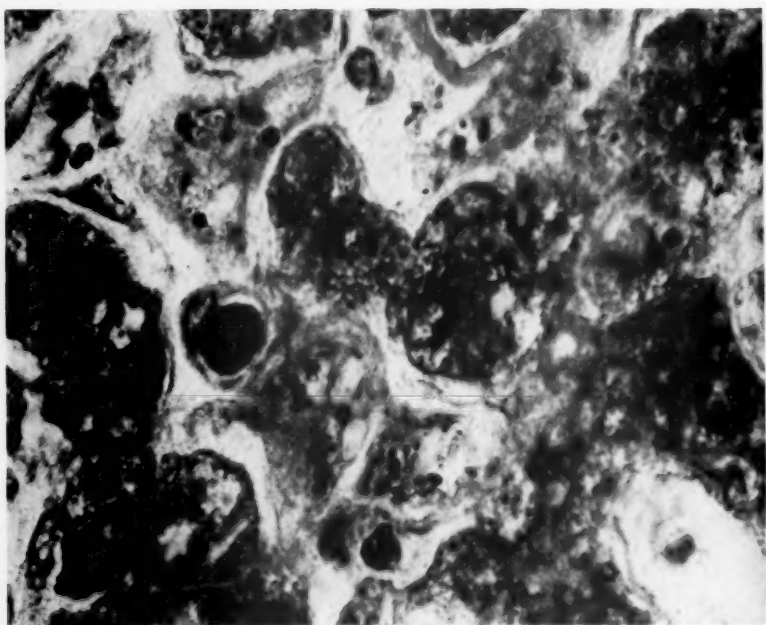


FIG. 8.



FIG. 9.



FIG. 10.



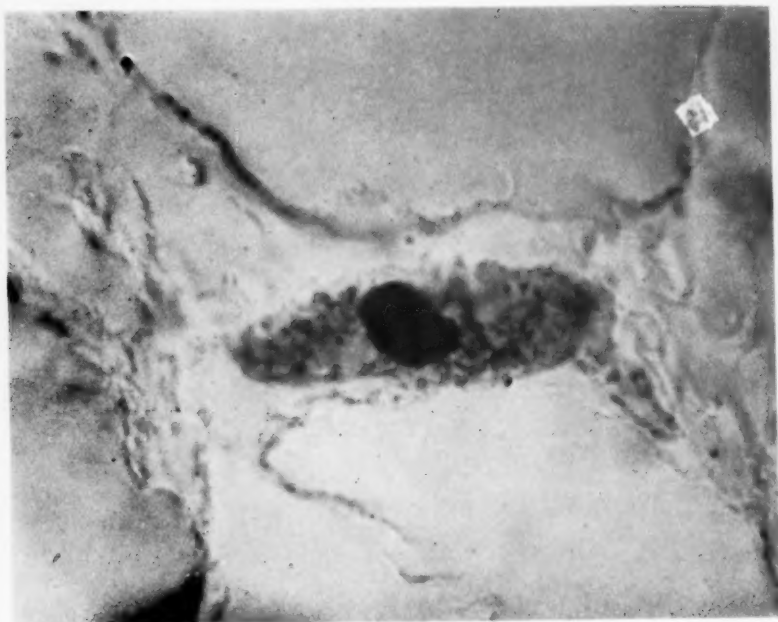


FIG. 11.

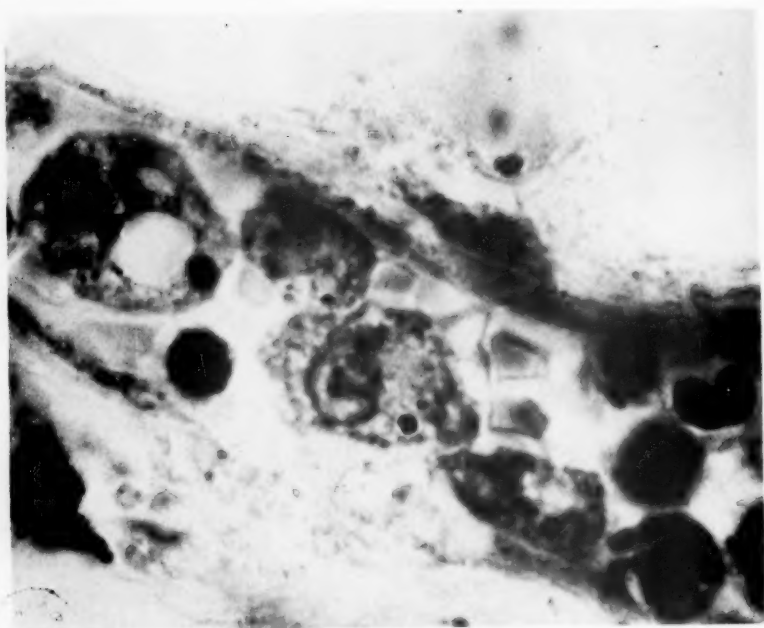


FIG. 12.



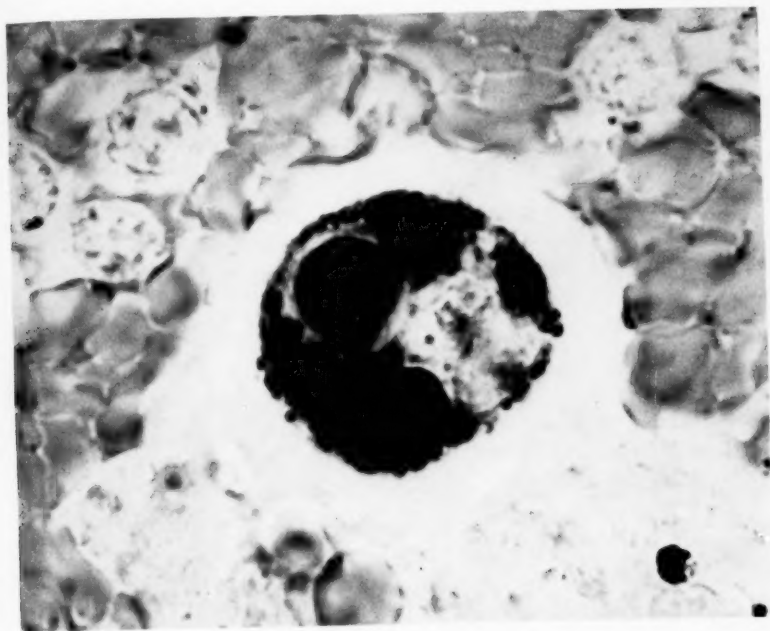


FIG. 13.

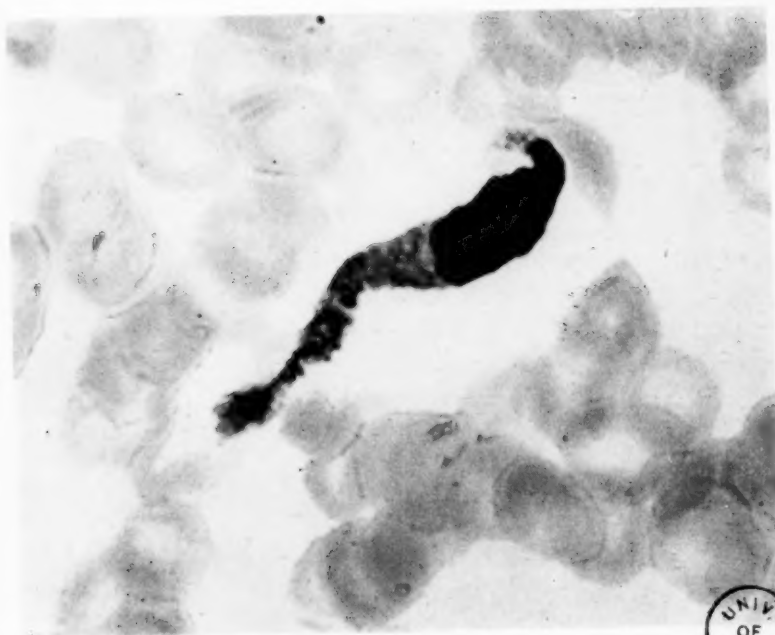
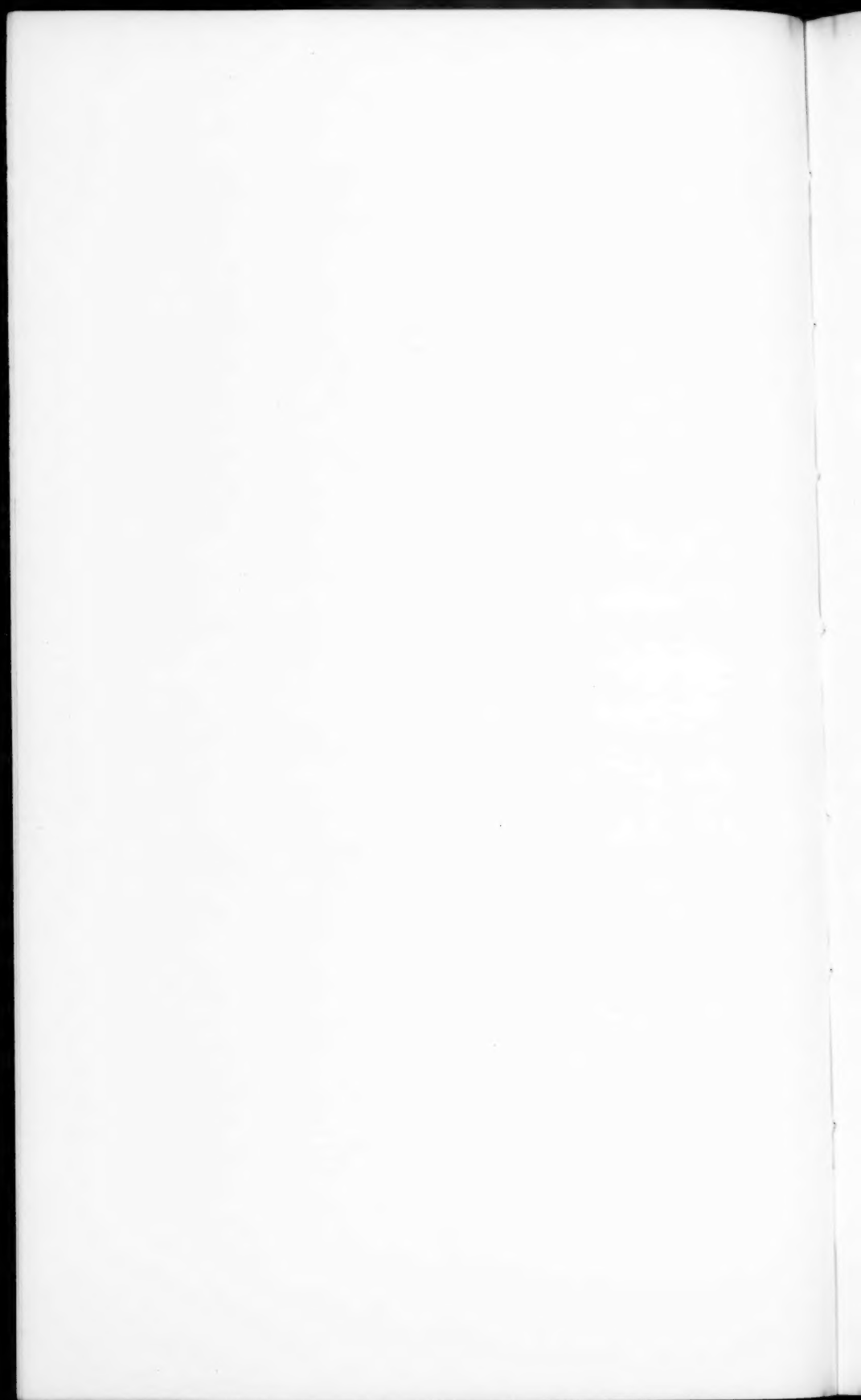


FIG. 14.





## PLATE 4.

- FIG. 7. Liver. Miliary nodule in the periportal connective tissue. The majority of the cells making up the nodule are basophilic round cells (undifferentiated mesenchymal cells) in various stages of development. Toluidin blue.  $\times 250$ .
- FIG. 8. Liver. Intense reaction of the histiocytic lining cells of the hepatic sinusoids. The swollen cytoplasm of the lining cells frequently fills the entire lumen ingesting pigment, parasites, white and red blood corpuscles. The liver trabeculae appear as dark, slightly vacuolated rows. Toluidin blue.  $\times 1000$ .

## PLATE 5.

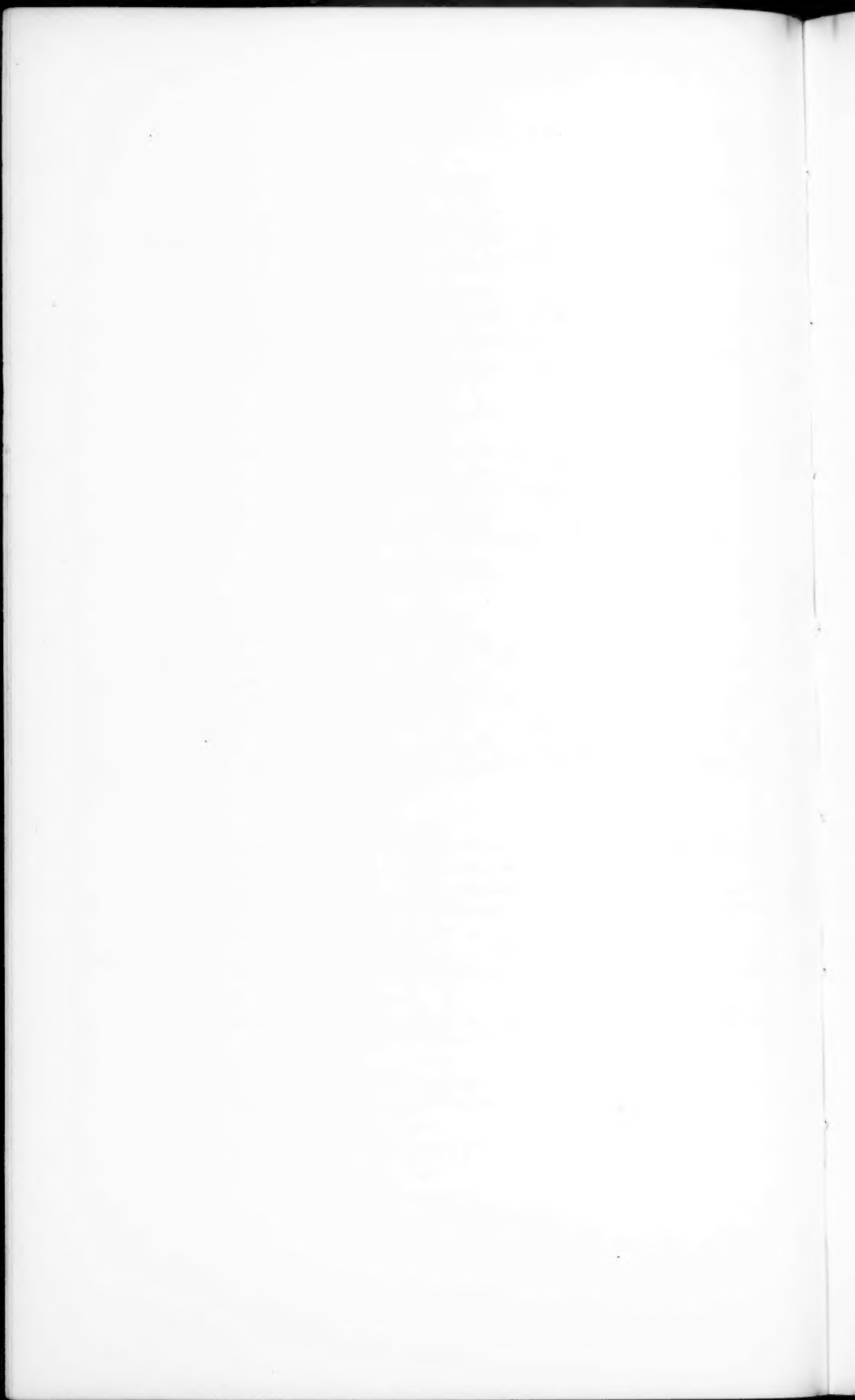
- FIG. 9. Intestines. Two vessels of the submucosa in which the red blood corpuscles are almost entirely replaced by white cells. Toluidin blue.  $\times 60$ .
- FIG. 10. Lungs. Large, highly phagocytic blood macrophage in a vessel of an alveolar wall. The macrophage has phagocytized two white cells and young parasites. Haematoxylin-eosin.  $\times 1000$ .

## PLATE 6.

- FIG. 11. Subcutaneous fatty tissue (abdominal wall). Large, activated tissue histiocyte without vacuoles between fat cells. Toluidin blue.  $\times 1600$ .
- FIG. 12. Subcutaneous fatty tissue (abdominal wall). Longitudinal section of a venule. In the lumen to the left there is a blood macrophage with a large vacuole and two coarse pigment granules. This cell is followed by a small, dark lymphocyte nucleus and three smaller macrophages. To the extreme right there are three medium-sized lymphocytes and a monocyte with a horse-shoe shaped nucleus. Toluidin blue.  $\times 1600$ .

## PLATE 7.

- FIG. 13. Smear from a vein of the cut surface of the spleen. Large Sabin's clasmatocyte with orange-tinged vacuoles. The black parts on the photograph were vacuoles which stained in a brilliant orange red color in the original preparation. The patient died on the 28th day following inoculation and four days after the first dose of quinine was administered. Stained in neutral red.  $\times 1600$ .
- FIG. 14. Blood smear from finger. Tailed blood histiocyte. The cell was found in a malaria-infected patient, twelve days after inoculation at the beginning of a paroxysm. Temperature:  $99^{\circ}$  F. In this smear there were 44 per cent polymorphonuclear leukocytes, 18 per cent immature polymorphonuclears, 7 per cent myelocytes, 13 per cent monocytes, 10 per cent small lymphocytes, 5 per cent large lymphocytes, 2 per cent basophilic round cells (Tuerk's irritation cells; Maximow's free, undifferentiated mesenchymal cells), 1 per cent eosinophiles. The histiocyte was found after more than four hundred white cells were counted. Wright stain.  $\times 1600$ .



## MEDICAL AND PSYCHIATRIC SERVICES IN FEDERAL PENAL AND CORRECTIONAL INSTITUTIONS.\*

By ASSISTANT SURGEON GENERAL W. L. TREADWAY,  
*United States Public Health Service.*

A significant change affecting the individual federal prisoner occurred during the fiscal year ended June 30, 1931. Under the Act of May 15, 1930 (U. S. Code, Supp. IV, Title 18, Sec. 751 and 752), the United States Public Health Service was authorized to supervise and furnish the medical, psychiatric, and other technical and scientific services in the federal penal and correctional institutions; a distinct departure from the former policy of having an individual medical organization for each prison.

Pursuant to the Comptroller's decision of February 2, 1930, Section 2 of the act mentioned is interpreted as providing that the applicable appropriations under the Department of Justice should bear the entire cost of compensation, allowances, and expenses of the personnel of the Public Health Service detailed to the Department of Justice under the terms of the statute, but that such payment shall be in accordance with the laws and regulations governing the personnel of the Public Health Service. The entire cost of this service is to be charged under the Department of Justice appropriations by means of reimbursement of appropriations or allotment of funds. The administrative control of the personnel is to remain with the Public Health Service, and their rates of compensation, the value of allowances whether in kind or commutation thereof, are to be determined under the laws and regulations of the Public Health Service.

The work of organizing the medical and psychiatric service for federal prisoners was begun on July 1, 1930, through the Division of Mental Hygiene. Regulations covering the relationships

\* This introductory article will be followed by other contributions dealing with various aspects of the Public Health Service of the United States Government, with special reference to the activities of the Division of Mental Hygiene.

to be maintained between the two Departments concerned were prepared, and plans and policies evolved.

Before inaugurating the medical services in federal penal and correctional institutions, it seemed desirable to take stock of the situation and attempt to lay down some general broad principles as to what an adequately balanced medical program for prisoners should be, and what contributions modern medicine can make to this particular field. The objectives and functions of an adequately balanced medical program for those who violate the law could be divided into three general categories: First, the relation which such service bears to the safety and protection of the civil community; second, its bearing upon the safety and protection of the institutional community; and third, its bearing upon the medical services for individual violators. Approaching the problem in this particular way, the activities and functions of a well-balanced medical program could be briefly enumerated as follows:

(A) SAFETY AND PROTECTION OF CIVIL COMMUNITY.

- (1) The segregation, under appropriate safeguards and under medical administration, of the criminal insane and mentally abnormal violators of the law in special institutions provided for the purpose, or in parts of institutions devoted to the care of civilian insane with the object of cure, eventual adaptation to community life, or the protection of society against the dangers involved in their release.
- (2) The segregation and humane internment, under medical administration, of chronic alcoholics and drug habitués with the object of cure, eventual adaptation to community life, or the protection of society against the dangers involved in their release.
- (3) The segregation, under appropriate safeguards and under medical administration, of the tuberculous violator of the law in a special institution provided for the purpose, or in parts of institutions devoted to the care of the sick with the object of cure or arrest of the disease.
- (4) The assumption of responsibility by competent jurisdictions for the subsequent care of tuberculous, insane, and mentally abnormal violators of the law, and the development of methods for a humane interchange of such patients between jurisdictions having legal responsibilities for their care and supervision as a means for the protection of civil communities.
- (5) The rendering of all venereal diseased violators of the law non-infectious before discharge to civil communities, or arranging for future treatment by agencies having competent jurisdiction when release is imperative for cases in the communicable stage of the disease.



(B) SAFETY AND PROTECTION OF INSTITUTIONAL COMMUNITY.

- (1) The recognition and isolation of the insane and mentally abnormal of an institutional population with the object of protecting the institutional community, preventing the miscarriage of a disciplinary régime applicable to a general institutional population, and the ultimate evacuation of mentally disordered persons to institutions designed and operated for their care.
- (2) The teaching of recognized principles of personal hygiene to the institutional population by practice, example, or otherwise; application of recognized principles of sanitation and preventive medicine to the institutional environment and institutional community; early recognition and isolation of all communicable diseases, including tuberculosis, and venereal diseases when in a communicable stage; the ultimate evacuation of the tuberculous to institutions and to environments best suited to their care and treatment; and the application to violators of the law of recognized tests for determining susceptibility to communicable disease, and rendering the non-immune immune through the application of known and approved methods.

(C) MEDICAL SERVICES FOR INDIVIDUAL INMATES.

- (1) Advocating the organization of a resident medical staff, including visiting consultants in the several specialties or branches of medicine; providing facilities for the mental and physical examination of inmates, and for the observation, diagnosis, and treatment of the ambulant, semi-ambulant, and bedridden sick; and the introduction and use of suitable clinical records.
- (2) Advocate formal medical consultations with institutional officials concerning a program for the rehabilitation of the individual inmate and his ultimate disposition.

The policy pursued in connection with the development of this work in individual prisons under the control of the Department of Justice concerned itself with evolving an organization about a diagnostic clinic that would serve as the center for all medical activities incident to the diagnosis and treatment of individual prisoners. The proposed adjuncts to this diagnostic center, concerned with services to individual prisoners, are essentially as follows: Reception and quarantine wards, general medical wards, general surgical wards, wards for the physically infirm and handicapped who require a minimum of medical supervision, psychiatric wards for the care and observation of the mentally ill, tuberculosis wards for the temporary care, observation, diagnosis, and treatment of the tuberculous, and an out-patient or "sick call" unit.

It was also appreciated that a medical organization for rendering service to the prison population as a group was concerned with problems of sanitation; measures for controlling and preventing the spread of disease; library and research activities; psychiatric problems relating to discipline; dietetics; recreation and general morale; provisions for furnishing medical and hospital supplies, the latter being made possible through transfer of funds for this purpose; and administrative details incident to the conduct of public business.

The functional activities for an appropriately organized medical service for prisoners necessarily embrace the primary and secondary examination of persons newly admitted to prison, medical treatment for those requiring it, and special physical and mental examinations of inmates.

The primary examinations embrace the physical and mental examination of all new inmates; those without diseases or defects being evacuated to the prison after a reasonable time, and others requiring further observation, study, or special treatment being kept under medical supervision.

The latter activities come within the purview of secondary examinations, embracing such activities as laboratory tests, including X-ray; activities with reference to internal medicine; surgery; eye, ear, nose, and throat; dentistry; urological and genito-urological services; and psychiatric and psychological services. To these are added such adjuncts as orthopedic, neurological, and sociological services. All the activities enumerated above are the detailed functions of the diagnostic center, being correlated and coördinated by discussions at staff conferences.

The treatment and observation functions would be further represented by an activity concerned with the care of the ambulant, semi-ambulant, and bedridden tuberculous prisoners, and with those suffering from psychiatric disorders, including the feeble-minded or defective delinquent, the psychopathic delinquent, the epileptic, the insane, and those showing neurological symptoms of mental ill health, including acute and sub-acute intoxication and exhaustive states. The activities of a properly organized medical service for prisoners involve further diversification found in the need for dental care, physiotherapy, occupational therapy, prosthetic devices and

appliances, pharmaceutical services, and certain administrative details incident and necessary for carrying on this essential work.

The functions of treatment bear a relation not only to the newly arrived inmate, but to those who may already be residents of the prison, and to the ambulant sick call and out-patient department, to special examinations and special medical consultations. The examination and treatment activities of the medical service also bear a relation to the subject of parole, discharge, pardon, transfer, or ultimate disposition of individual prisoners.

The medical activities concerned with the prison population as a group are involved with the subject of diversified and balanced diets; with factors incident to the preparation and distribution of foods; with the preparation and issue of special diets; with sanitation as it relates to water, ventilation, exercise, prevention of disease, and the control of epidemics. Other activities bearing upon the health of prisoners as a group concern themselves with the subject of occupational diseases and occupational hazards, and the prevention of such diseases and hazards in connection with the industrial activities of the prison. The health of the prisoners as a whole bears a relation to the subjects of recreation, general morale, and mental, physical, and moral rehabilitation.

Through the assistance and cooperation of the Division of Scientific Research, arrangements were perfected whereby the National Institute of Health conducts serological examinations for syphilis for all federal penal and correctional institutions except the United States Penitentiary at McNeil Island, Washington. The Wassermann tests for that institution are sent to the Public Health Service laboratory at San Francisco, California.

Plans have been perfected, through the assistance and cooperation of the Division of Venereal Diseases, to standardize the methods of treatment accorded persons afflicted with venereal diseases who are inmates of the federal penal and correctional institutions, and the Division of Domestic Quarantine, through its Engineering Section, has rendered valuable assistance in matters pertaining to sanitary engineering problems at the respective prisons.

In undertaking to organize the medical service for the federal penal and correctional institutions under the control of the Department of Justice the United States Public Health Service has followed in general the policies outlined above. The development of

the organization, however, has been necessarily of a piecemeal fashion owing to the dearth of personnel available.

The work of organizing the medical services for the several prisons under the control of the Department of Justice is reflected in the increase of the Public Health Service personnel employed, the progress made in equipping the hospital units, the organization of certain divisions or services within the medical departments, and the establishment of a system of clinical, property and personnel record keeping, and with services rendered to individual prisoners and to the prison population at large.

# A MENTAL HYGIENE STUDY OF JUVENILE DELINQUENCY.

## ITS CAUSES AND TREATMENT.

By JOHN LEVY, A. M., M. D.,

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## SUMMARY.

- I. Introduction: The material studied.
- II. Factors influencing delinquency.
  - a. Heredity.
  - b. Economic and social background.
  - c. Parental influences.
  - d. Sibling relationships.
  - e. Physical health of the child.
  - f. The child's personality.
  - g. School adjustments.
  - h. Recreation and friends.
  - i. Psychiatric conflicts.
  - j. Race conflicts.
- III. Varieties of delinquent children.
  - a. Serious delinquents:
    1. Constitutional deviates.
    2. Psychopathic personalities.
    3. Encephalitics.
    4. Epileptics.
    5. Mental defectives.
    6. Psychopathoid or neurotic children.
    7. Sociological deviates.
  - b. Mild delinquents:
    1. Cultural deviates.
    2. Special types of sex conflicts.
    3. "Conflict of interests."
    4. Non-resistant children.
    5. Unsatisfied or dissatisfied children.
- IV. Treatment procedures.
- V. Conclusion.

## I.

The psychiatrist, interested in environmental as well as intraphysic influences which cause children to deviate from a hypothetical norm, finds his social laboratory ever enlarging. Indeed, the clamorous demands for help in the solution of their problems from associated disciplines force this growing interest upon psychiatry willy-nilly. One of the fields most challenging to the social psychiatrist—and most productive for a give and take relationship with professional allies—is juvenile delinquency. The understanding and treatment of children's criminality is a happy hunting ground for the social scientist, be he sociologist, psychologist, anthropologist or psychiatrist. It is an especially profitable field for side by side effort. Psychiatry, however, in responding enthusiastically to this call for assistance is called upon to evaluate its own contribution most critically and to avoid the overstatement and the uninhibited promises that accompany the early steps of any happy social relationship. Psychiatry setting itself up as judge of social tribunals frequently runs the risk of being hauled before its own court on the charge of "unscientific procedure." This lapse from scientific grace is usually illustrated by the insufficient number of cases from which the mental hygienist generalizes or the absence of a control group against which conclusions can be checked. A plea of "guilty" is entered for the first charge in connection with the present study.

This report, however, does not aim to be a statistical study, and its conclusions are tentatively offered subject to further statistical check. It is the result of an intensive clinical investigation carried on over a period of two years in a small child guidance clinic.<sup>1</sup> The study is an attempt to learn about the nature of juvenile delinquency,<sup>2</sup> the factors which steer a child into crime rather than into other types of behavior or personality deviation, and the methods that can best be used to prevent or offset criminal careers.

The material for this research was supplied chiefly by schools, more than anxious to receive help with their problem population.

<sup>1</sup> Members of the staff could hardly help putting into this report, too, their many years' experience in the field.

<sup>2</sup> Delinquency is defined in this investigation as any act, *e. g.*, stealing, sex activity, incorrigibility, for which the offender might be brought before a court.



A crime prevention bureau and other social agencies also called upon the clinic for help. Only half the children referred to the clinic were delinquents. The non-delinquent children sent in for treatment were used as a control group with which to compare findings relating to delinquency. The non-delinquent children suffered from scholastic maladaptation and personality difficulties. About three-fourths of the children coming into conflict with the law were boys, whereas the non-delinquent group was equally divided as to sex. There was also an age difference between the two groups, younger children being sent to the clinic for social misdemeanors. The average age of the delinquents was around 12; of non-delinquents, between 14 and 15. This finding perhaps signifies nothing more than the fact that society takes its criminal youngsters a little more seriously than other types of deviates and seeks treatment for some of them earlier in the course of their difficulties.

The methods of studying children from both groups were uniform. A full social history<sup>3</sup> was first obtained by a trained psychiatric social worker. In order that the information obtained from the parent should be as objective as possible, the worker visited school and home, and in this way frequently was given the opportunity of checking up for herself the nature and possible causes of the disturbing behavior. With the history in their hands, the examiners—psychologist, psychiatrist<sup>4</sup> and pediatrician—proceeded with their independent examinations of child and parent before pooling their findings and coming to a group decision as to the underlying causes of the child's conflicting behavior and ways of remedying it. These prescriptions were, in half of the cases, placed in the hands of school authorities or social agency workers to act upon. The other half of the cases were carried for treatment by the clinic's own personnel. Many of the cases carried by outside organizations returned for psychotherapy; moreover, consultations back and forth between clinic and agency or school with regard to technical procedures were frequently held. By virtue of this close cooperation between clinic and community there has gone on during the last two years a steady check with regard to the clinic's

<sup>3</sup> See appended guide for obtaining psychiatric social history.

<sup>4</sup> See appended guide for psychiatric examination of children.

conclusions as to the causes of delinquency and the value of treatment recommendations based upon the clinic's diagnoses. In these ways there have been built up a valuable body of data and a fairly wide experience from which to draw the following conclusions. These conclusions relate to the importance of such influences upon delinquency as heredity, economic status of parent, methods of discipline, sibling relationships, cultural patterns and the physique, personality, intelligence and conflicts of the child.

## II.

In the matter of heredity, the parents and other relatives of delinquent children are likely to be handicapped by social stigmata; the family background of other types of problem children manifests a neurotic taint. Examples of social stigmata met with in the present study are alcoholism, immorality, pauperism and, occasionally, criminality. Neurotic taints are represented by such difficulties as psychoses, psychoneuroses and the euphonious "nervous breakdown." The following family history, very briefly summarized, illustrates the more typical nature of a delinquent soil:

Mr. A was born in New York, of American parents. He has had very little education. He served in the United States Army during the war but did not serve in any foreign country. He drives a truck for a bakery and works from 2 a. m. until 1 p. m. He is tall and heavily built; appears to be of limited mentality; very careless in his dress. Little was learned about his habits. An acquaintance said that he has always been a shirker. Even though he is big and husky he always picked out the easiest job—never showed much ambition. He does not seem to understand the children's difficulties. He is embarrassed at their stealing and feels that they will have this habit always. Mr. A's father died at the age of 56 from a blood clot on the brain. His mother died at the age of 53 of heart trouble. He has three sisters and one brother living and well.

Mrs. A is American born. She has had very little education. She is loose in her morals and has an ungovernable temper. She has always worked in factories and laundries. According to Mr. A, she is not mentally equipped to do other types of work. Mrs. A's mother is German, living and well but very hard of hearing. Mrs. A's father died several years ago—probably from alcoholism.

Mr. and Mrs. A were married November 12, 1917, after a short courtship, although she had a previous marriage and was not divorced. She married Mr. A under the name of Ruth Scott. Later when Mrs. A was divorced she refused to remarry Mr. A. They continued to live together for a time, but Mrs. A was very fond of seeking pleasures out of the home, and neglected

the children. Mr. A is now very bitter towards Mrs. A and her relatives. They are equally as bitter against him. Since referring Dorothy to clinic, visitor has learned through relatives that Mr. A has always been brutal. The couple's sex life was very unhappy. Mrs. A had several uterine hemorrhages, which a friend blamed on Mr. A's disregard for Mrs. A's physical condition. Both of Mrs. A's sisters are living with men to whom they are not legally married, and who are rum-runners.<sup>8</sup>

↓ Compare with the above account of illicit trafficking of one kind or another occurring in the family of a boy who stole and ran away from home the following series of misfortunes which befell the family of a girl referred to the clinic because of poor school work and unexplainable crying spells. In this case the lowered resistance of the central nervous system of all members of the household is striking:

Father, Mr. B, is 54 years of age. He was born in the United States and is the oldest of 12 children. His parents are dead. He is Protestant, whereas his wife is a Catholic. The children are being brought up as Catholics. Mr. B's father was never the head of the house. This rôle was usurped by Mr. B himself, who was his mother's favorite. In this rôle he dominated every member of the family. In fact he was so domineering that life was made very miserable for his younger brothers. All these brothers consider their older sibling very nervous.

Mrs. B is 44 years of age and the oldest of three children. Her youngest brother recently died from a brain tumor.

Mr. and Mrs. B have been married for 18 years. Mrs. B was warned before her marriage that her husband had an unkind disposition. The marriage was happy until the birth of the oldest child. This child was always mentally retarded and developed sleeping sickness at the age of 12. The father became over-attached to this boy and did not want to have any more children. When he learned of Mrs. B's subsequent pregnancy he became violently angry. From that time his temper has been uncontrollable. He is nervous at all times and easily irritated. He walks and talks in his sleep.

The second child, unwanted by Mr. B, was born with hydrocephalus and has never been to school. He is paralyzed on the left side. Although 16 years of age he has the physical development of a five-year-old child. He is almost blind and suffers from convulsions.

The mother feels herself completely unable to handle the family situation and obtains her only solace from membership in the "Cheerio" group. She follows the activities of this group with an almost religious fervor. The children, too, have obtained some relief from this same source.

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<sup>8</sup> All necessary precautions have been taken to disguise the identity of every case.

The question of the relationship of juvenile delinquency to economic and social status of parents need not be stressed in the present study. This problem has already been investigated statistically by the writer.<sup>9</sup> The examination of 700 case records clearly showed that the incidence of delinquency increases as one goes down the social scale, the incidence of personality disharmonies decreasing at the same time. One or two interesting findings, supplementing this general conclusion, brought out by the present study are worthy of mention. The nature and seriousness of the misdemeanor varies with the social background of the child. Lower grade children engage in plundering, bunking out, and heterosexual activity. This behavior is likely to be prolonged and aggravated as the environment becomes worse. Favorable changes in surroundings have beneficial effects upon conduct. Children from better homes, on the other hand, commit more elaborate sex offences; *e. g.*, homosexuality. Their stealing is more likely to be complicated by forgery. Truancy from home or school is usually more subtly mixed up with the personality of other people. What part higher intelligence also plays in bringing about these same differentiations in behavior can only be determined by statistical analyses on a large number of cases. Such an analysis carried out in connection with the study to which reference has already been made would suggest that intelligence is a more important influence upon conduct than social background; although, to be sure, these two factors are usually allied. From the present study it would appear that the more intelligent child does not engage in delinquency until other methods of obtaining its goal have failed. Misdemeanors are *secondary* responses in the case of high I. Q.'s, undesirable personality reactions having antedated them. The less intelligent child makes a more direct and immediate anti-social reaction to any affront. The following two abstracts summarized from case histories show the concomitance between background or intellectual status and variety and immediacy of misdemeanor:

Joseph is referred to the clinic because of stealing. He is now 14 years of age. His stealing began at the age of eight. At first he would take 10 cent

<sup>9</sup> See: "A Quantitative Study of the Relationship between Intelligence and Economic Status as Factors in the Etiology of Children's Behavior Problems." American Journal of Orthopsychiatry, January, 1931.

pieces, but it soon required 50 cents and a dollar to satisfy him. After stealing money he would stay away from home for many hours. He now stays out all night. In company with his gang he is engaged in the theft of clothing, which he sells to pay for his visits to the movies. There is nothing especially subtle in Joseph's personality. He is a happy-go-lucky individual who enjoys the usual boyhood pleasures and activities. His intelligence quotient is around 90. The social background from which he comes is very poor. His mother and father are Italians, the father working on the docks. Siblings help to eke out the family income.

Joseph's stealing represents the cooperation of a rather dull child in the anti-social activities of his associates. The case of Mary, 17 years of age, is quite different. Her personality and intelligence, the nature of her offense and the recency of its appearance contrast markedly with Joseph's history. Moreover, the economic status of her parents is much better. Her stealing and truancy are part of a general reaction against the domination of her mother, coupled with the need to preserve her social prestige when it was threatened by the curtailment of the kind of clothing and the amount of spending money usual in her group:

Mary was referred to the clinic because of emotional difficulties which interfered with her school work. Her mother finds her difficult to manage. More recently she has been given to charging things to the family account at department stores, and misusing money her mother has entrusted to her for payment of various fees.

Mary's emotional difficulties began when she was about five years old. At this time she resented being ordered around by her mother. Since then the difficulties between parent and child have become intensified. Mary now admits that she hates her mother, and the latter has become enraged enough to chase her daughter with a knife. This girl's poor school work began a short time ago when her mother tried to dominate the principal. The principal had ordered middies for graduation, and Mrs. C, who is a beautiful sewer, wanted Mary to wear a dress she had made. The result of this episode was that the girl was taken out of this school and placed in another from which she frequently truanted. The stealing ensued when Mrs. C denied her daughter clothing and spending money. The charge account was used to obtain silk stockings, and the money for fees found its way into drug stores as payment for ice cream sodas.

Mr. C is a fairly well-to-do man. The family own a fine house in a good residential section of town. The mother is an outstanding member of the local church. Mary's I. Q. is around 125.

4 Closely connected with the problem of the relationship of social background to juvenile misbehavior is the question of the type of discipline and supervision practised by parents of both groups.

Our experience shows that the parents of delinquent children handle their offspring by methods which differ markedly from those used by parents of children whose problems belong to the non-delinquent group. The supervision and disciplinary methods used in the homes where criminality is manifesting itself can be characterized as inadequate and neglectful. Children are allowed to run around the streets while mothers work or play. Sometimes a child is left in the care of an older unintelligent guardian. Discipline is likely to be erratic and extreme. The relationship between this type of care and the lower grade social background in which many young delinquents begin their career is very direct. But, as already pointed out, all delinquents do not come from low grade homes. What is the nature of the supervision exercised among children committing criminal offenses in a higher grade setting? In such cases the disciplinary relationship between parent and child corresponds to that which exists in the non-delinquent group, where an overprotective, overanxious attitude on the part of one parent functions side by side with an unsympathetic harshness on the part of the other. Where the problem child is a boy the mother assumes the ministering rôle; when a girl is in conflict, the father is usually found to be responsible for any overattachment that exists. This parental overattachment frequently goes so far as to bring a mother and her 14-year-old son into the same bed at night. Subtle demonstrations of favoritism are a less extreme manifestation of this relationship. Naturally this emotionally charged atmosphere is productive of much discord in the homes of children suffering from scholastic or personality maladjustment. In most instances, however, the primary battle is really between the parents—or even between parent and grandparent—and the children are only a battleground upon which to wage a fierce vicarious fight. Mother, already antagonistic toward her husband, coddles her son. Father, jealousy aroused, harshly rebukes the boy and condones his sister's peccadillos. Mother retaliates by scolding her daughter and drawing her boy closer toward her. Friction begets friction, as layer upon layer of reciprocal emotional dissatisfaction is superimposed.

The discord found in the homes of lower grade delinquent children—where delinquency is more immediate and primary—is less subtle and insinuating. It rapidly flares up and expresses



itself in vicious outbreaks of temper or irritation. It is related, too, to economic distress, broken homes, as well as to the personalities of the adults. The fighting that goes on in such households is more primitive and perhaps less deadly. The big stick makes more noise, but does less harm than poisoned gas.

The difference in the nature of the household strife between the two groups of cases finds expression, too, in the relationship existing between the siblings.<sup>7</sup> No doubt reflecting the way that parents oppose each other, siblings in non-delinquent families show in relation to each other, clear-cut emotional embroilments. The character of the entanglement bears a definite relationship to the ordinal position in the family of the maladjusted child. Such a child is likely to be very jealous of younger siblings. Toward older siblings it acts in an outraged fashion at any brotherly affront, thus again bringing to its side the over-protecting parent.

Among the less intelligent group of delinquent children two clear-cut types of rapport obtain among the siblings. Frequently one finds two brothers, or even a sister and brother, of close chronological age "partners in crime." In such cases the older child is usually leading astray a weaker more suggestible sibling. Together they form a close offensive and defensive alliance. Another type of sibling relationship is founded upon lack of solidarity in those homes where each child looks after himself—in so many ways. In these instances the delinquent child is opposed and nagged by all other members of the family, and obtains his support outside of the home from the neighborhood group.

Where delinquency occurs in higher grade families the sibling attitudes are characterized by marked jealousy.

Illustrations of the way in which different types of disciplinary attitudes, and of discord in the home constellate around different examples of juvenile maladaptation are seen in the following summarized case records:

Harry, aged 15, is referred to the clinic because his mother is afraid that he is not developing like other boys.

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<sup>7</sup> A previous study by the writer shows that the largest incidence of juvenile delinquency is found among the largest families. See: *A Quantitative Study of Behavior Problems in Relation to Family Constellation*, *American Journal of Psychiatry*, January, 1931.

Mrs. D has given up her entire life to Harry. She washed and dressed him until long past the usual age, accompanied him to school at a time when other boys were going alone, and as he grew up supervised his friends and recreation equally carefully. His every need was taken care of with marked solicitude. Any little illness was the cause for much anxiety on Mrs. D's part. Mr. D did not approve of his wife's methods of handling the boy, and many quarrels ensued. The father would frequently tease his son, much to the mother's irritation. The parents frequently compared the boy with his siblings: the mother of course always pointing out his virtues; the father, his faults.

This same concatenation of emotional and opposing methods of discipline, of hectic home life and sibling jealousies is seen in the case of a girl aged 17 who was referred to the clinic because of poor scholarship and emotional difficulties. This interrelationship is perhaps best illustrated by an excerpt from the psychiatrist's reports:

The mother attempts to live a very reasonable life, unmindful of the emotional implications of her behavior. She, like Grace, has everything well rationalized, and does not see that the situation needs a more humane understanding approach. She herself claims that she is under the domination of her own father (with whom she no doubt identifies herself) and is taking his place in her own home. She is much upset by Grace's liberal ideas on religion and sex and independence. She has very definite ideas as to what she wants for the children and does not always see that these ideas may not fit in with the children's desires. Her conflict with Grace is especially acute because the other children look up to Mrs. D and do as she tells them. She cannot understand why Grace cannot feel this way about her, too. She is a very religious, proud woman, who places a good deal of stress upon social appearances. She seems to us to be much more concerned with what the neighbors think than what is best for her children. She has a hard morality from which she gets most of her solace. She sees Grace turning out quite differently from what she wants, and is therefore more tenaciously trying to mold her. There are thus a good many sources of conflict in the home. For example, Grace is interested in the violin; her mother wishes her to be a pianist. Grace is interested in boys; her mother would like her to keep away from all boys as she had to do when a youngster. Grace's refusal to be the family drudge also annoys her mother, since it means that the younger children whom she favors have to work, too. The mother does not like this. It frequently happens, apparently, that the father sides with Grace. In such cases, the mother's antagonism is increased and expresses itself against the father, too. At such times the mother threatens to leave home.

Grace admits that she hates her two sisters, but loves the youngest one. These two sisters spy on her at every opportunity. Grace says it is no use attempting to be friends with them. They are petted by her mother. She

believes that her father is her friend; but he, too, is so dominated by her mother that he cannot go against his wife and stand out for her as frequently as she would like. When the mother goes too far, however, he sides with his daughter, thus driving the mother to tears.

The case of Benny, a boy of 12, referred from public school because of his incorrigibility, truancy, and stealing, illustrates some of the points that have been made with regard to the nature of the discipline, the type of discord in the home and the sibling adjustments that are found in one group of delinquent children:

Benny was recently arraigned in the children's court with his brother Freddy, one year younger. They broke into a store and stole some odds and ends.

Benny is a leader and quite popular. He is always leading a group of boys, including his brother, in some escapade. Both he and his brother have good voices and sing on the street for pennies.

Mr. E used to work in a baker's shop. He is now confined to bed because of heart trouble. His wife goes out to work. The children are left alone to shift for themselves as best they can. Occasionally an unintelligent mother-in-law comes around and takes care of the family.

Before the father's physical breakdown the home was fairly well managed. All members of the household were interested in music, and the family stayed rather solidly together. Mr. E's attacks of ill health and the need for his wife to work hard frequently cause quarrels at the present time.

In the above case the delinquency of the children is related to definite precipitating factors in the home leading to inadequate supervision and a break in family solidarity. This solidarity, however, is retained to some extent by the way in which the brothers line up side by side.

In the following case the home was never happy. Each child was wanted in proportion to his financial contribution. The youngest child in the family, reported to the clinic because of running away from home, contributed the least and was the least wanted:

Irving is 14 years of age. There are five sisters or brothers ahead of him. He is generally incorrigible, defying authority, striking children who come in his way, demanding money from home, and getting into fights with his brothers. The family noticed that he was difficult to manage even at the age of four. For the most part they now ignore him, except when he proves too disturbing. If he does not call his delinquencies to the attention of the family he is allowed to go his own way. When he makes life too difficult for his parents, he is beaten with a strap, punched, deprived of food and sent to bed.

But little wonder that the family makes no attempt to understand Irving's difficulties. The father is a peddler and has to work from early morning until late at night with a pushcart. The mother now has high blood pressure and cardiac disease, which preoccupy her. The oldest child, a girl, suffers from dysthyreosis and is very irritable and uncooperative. The next child, a boy, was in the anemic class when at school, and suffers from osteomyelitis at the present time. Another child has a weak heart and works in a factory. The whole family is attempting to live on \$30 to \$35 a week, and is planning to move to even cheaper quarters. Hardly any member of the household has a bed for himself. The oldest girl recently found conditions at home too bad, and ran off with an Italian, although the family is Jewish. Whenever Irving's delinquencies come to the attention of his older brothers they beat him up and pass on. Living conditions have never been any better for this family.

The following case illustrates an act of delinquency committed by a very intelligent boy. It will be observed that the family inter-relationships correspond with those described in connection with children referred to the clinic for personality difficulties:\*

✓ Lester, a boy of 15, was referred by a high school because of forgery. He had copied his father's name on checks and cashed them at the corner grocery. His I. Q. is around 125.

Both parents tell an interesting story about Lester's relationship to them. There is no doubt that the boy is very much attached to the mother and feels some antagonism toward the father. Mrs. F says that a word from her that she did not love him would always make the boy unhappy, whereas Arthur and his father have never been able to agree. They argue and quarrel about small things. Mr. F feels that he is of an entirely different type from Lester, with no interests in common. Mr. F likes active, hard, masculine things; whereas he gives the impression that Arthur has sensitive, delicate interests. They both comment upon the depth of his interest in theatrical matters. Mrs. F also comments about the interest the boy shows in interior decorating. He is very fussy about the curtains and the pillow slips, and other household arrangements.

The origin of this mother's overattachment to her son, her one and illegitimate child, came out in connection with her story of his birth.

When seven months of pregnancy had passed, the woman for whom she was working, insisted that Mrs. F must go to the doctor. From the doctor she went to an Italian midwife who explained to her the nature of her trouble and suggested that she go to a local hospital. She went there and in company with many other unfortunate women, worked at the ironing board from five in the morning until five at night. She was wretched and miser-

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\* See pp. 77, 78.

able during the whole time; the physical suffering, the mental anguish, the other very unpleasant conditions that she describes in the hospital. She tells of being herded off into a room when inspectors were coming to visit; of seeing a woman give birth to a child on the stairs; of the poor emaciated babies left by their mothers. She paid her own way during this time and says that she was well treated at the time of birth. She decided that no matter how hard it was she would keep her baby. She nursed him in the hospital, whereas other mothers who were not going to take their babies never saw them after they were born. When she came out of the hospital, she found out that the brother for whom she had such a tender affection had died. This resulted in her milk drying up and the necessity for weaning the baby at once. This was done without difficulty. She then put the baby in a home to be looked after while she went out to day's work. This was continued for a year until Mr. F rented a house and she went to live with him—at first until she could get on her feet. The arrangement, however, has persisted ever since. He has always been most kind and considerate of her and she thought that her loneliness and his unhappiness were what had brought them together in the beginning. Even yet she does not know whether she has done right or wrong. She goes under her own name and he under his. She adores the boy, but is afraid that his life may be completely frustrated as hers has been. Although she does not say so in words, she keeps wondering whether or not her sin is what has caused the misbehavior in the lad.

So far the relationship of the child to its environment has been stressed. Our interest now turns to the child's own organization. Investigation along medical lines shows that physical status plays some part in the etiology of delinquency. Physical factors appear to operate in a selective way too. One finds, for example, that homosexuality among adolescent boys is frequently correlated with a constitutional bias. Such boys have effeminate torsos, delicate skins and ladylike voices. On the other hand the virile, manly, overactive chap is likely to be the leader of the delinquent gang, gullible members of which are likely to be poorly developed, undernourished and easily fatigued. Many borderline and pre-delinquent cases are picked up around puberty at a time when physiological stresses and strains add to the child's difficulty of adjustment. On the mental side the more usual psychiatric diagnosis—where such could be made at all—accompanying delinquency was one of psychopathic personality. Occasionally one ran into a child whose anti-social conduct was felt to be encephalitic in origin. Two cases of epilepsy, too, were causing the community a good deal of trouble.

Among the non-delinquents more serious physical conditions were met with. Cases of cardiac disease or infantile paralysis, for example, are apparently too debilitating and disabling to permit of violent types of social and anti-social activity. They are excellent soil, however, from which overprotective and other undesirable parental attitudes can spring up to engender personality and emotional complications in children. On the psychiatric side were found cases which could be labeled as psychoneuroses and functional psychoses. Such functional mental disabilities, except those mentioned above, were missing from the delinquents.

The following abstracts from case histories illustrate these points:

Peter, 17 years of age, was referred to the clinic because he had been found living in sin with older men. He is an effeminate young man with a very gentle voice and manner. He has deep eyes, fair skin and fine hair. His body proportions are askew. Body cavities are small, limbs are long. His genitalia are under-developed. The endocrinologists would diagnose him as suffering from some glandular dystrophy.

Frank, a boy of 15, was referred from a high school because of forgery. Psychiatric study of this case demonstrated an underlying homosexual conflict. Frank attempted to get away from the irritation of this conflict by choosing what seemed to him a lesser evil—stealing. This boy's physical make-up belongs to the Fröelich type—fleshiness, large hips, tendency to full breast development, short, squatty stature, and under-developed genitalia. Equally as interesting as these physical findings were the boy's reaction to his own body. He took off his clothes with much reluctance and was quite blocked when one attempted to have him discuss his own body. Apparently he is very sensitive on the subject.

Arthur is the leader of the neighborhood gang. Although only 14 years of age he has the physical development of a boy of 16 or 17. His muscles are well developed, especially his chest muscles. Secondary sexual characteristics are already manifesting themselves. There is a growth of hair on upper lip and chin, pubic hair is quite abundant. Reflexes are active. He wears long pants, talks with a strong voice and has a forceful manner.

The case of Henry, aged 15, is somewhat different. His behavior is also anti-social, but he gives the impression of being listless and fatigued. He is under-developed, walks with a fatigue posture, has poor musculature and suffers from diseased tonsils and adenoids. He has little resistance against respiratory disorders. His physical condition was bad enough to warrant immediate removal to a winter camp.

Sam, a boy of 12 years of age, was studied because of poor academic work, objections to disciplinary procedures at school, and his boastful attitudes. He is



not a delinquent. Sam was prematurely born and the mother admits that she is especially attached to him because of this fact. This overattachment is seen in the fact that he was breast-fed for more than a year, and even now is assisted in his dressing. At the age of three he developed infantile paralysis. He could not walk until he was seven years old. His mother carried him around. He is permitted to play only with younger children. There is an older brother in the home, but the younger brother, of course, receives preferential treatment. Mrs. G admits that her child is spoiled, but blames it upon the teachers, because they are without sympathy or understanding. The older brother tried to point out to the examiners some of Sam's faults, but Mrs. G immediately came to Sam's defense and blamed some one else for his difficulties.

Elias was referred from high school because his teachers thought he was slowing up mentally and losing interest in his surroundings. This boy was diagnosed as a case of dementia præcox, and sent to a hospital for treatment.

Sophie had unexplainable fainting attacks in school. Her physical examination was negative. Sophie had very marked feelings of social inferiority because of race, lack of friends and recreation. She also has romantic desires. She was diagnosed as hysterical; her fainting attacks were explained as an effort to get away from her difficulties.

Eleanor could get along with no one, nor could she carry through consecutively any project. She has run away from her parents and threatened her stepfather with a knife. More recently she attempted to set fire to her parents' home. She is a psychopathic personality.

As one breaks into the more formal physical and psychiatric diagnoses and learns about the personalities behind them, interesting differences come to light. While the personality make-up of delinquent or non-delinquent children conforms to no one set pattern, there are nevertheless striking differences between the personal characteristics of the two groups. In a general way one is impressed by the emotional immaturity of the non-delinquents, by the protesting or expansile capacities of the felons. Looking over the tabulated sheets classifying our data, one finds such adjectives as "emotional," "hysterical," "spoiled," "shut-in," "immature," used to characterize the personalities of the control group, whereas "irritable," "resistive," "vicious," "expansive," "dynamic," "forceful" are the more frequent nomenclature of the experimental series.<sup>9</sup> These differences in personality obviously bear some relationship to the differences in home background and par-

<sup>9</sup> Reference however has been made to the effeminacy met with in certain types of sex offenses. See pp. 85-86.

ental attitudes already outlined. That they are also related to differences in conduct is equally clear.

Alan, a youngster of 15, is a romantic fellow. He sits in class day-dreaming about aeroplanes and trips around the world. His teacher, being less romantic, objects to Alan's inattention and "bawls him out." Alan goes off in a huff to tell his mother who returns to "bawl out the teacher."

Inez, although chronologically 18, cries whenever her teacher comes near her. She has neither friends nor interests. Her teachers are sure "there is something wrong with her." Inez's intelligence is adequate, but her emotional age is about nine years.

John worries his mother because at the age of 15 he has no friends. He spends time reading or going on solitary walks. His most serious misdemeanor is a tiff with his mother when she attempts to "bring him out." Perhaps his mother is beginning to feel a little guilty about the way she has tied him to her. But then . . . As she says, "I had to find companionship somewhere. My husband and I have never gotten along very well together. I feel much happier since we are separated."

Edith threatened to kill her mother and got into the hands of a social agency. Her personality:

When Mrs. H became ill the children were left to do very much as they pleased, as Mr. H was employed. Edith was about eight years old and it was soon noticed that she became easily irritated, impatient, quarrelsome and unsympathetic toward Mrs. H. She was continually looking for a fight and every opportunity she had she would fight Ethel, her sister. She would also stand at a distance and shake her fists and arms at her mother saying "Oh, what I feel like doing." On one occasion she broke a chair by throwing it against another piece of furniture. While not affectionate with Mrs. H she will put her arms around Mr. H and caress him when she wants something. She also has done the same sort of thing with Mrs. C (a neighbor) saying, "Isn't my mother bad—she won't give me money for the movies." She does not like to be criticized and will yell at Mrs. H "Shut up," "Mind your own business," "You're nothing but a bum and a lazy good-for-nothing," when discussed adversely. No one has ever known Edith to be cheerful or enthusiastic. She has always been an indifferent and irritable child.

Harry's personality is much more attractive, it belongs to the forceful, expansive type. He is a friendly chap and needs companionship in his anti-social sallies. The following excerpts from his own autobiography give an excellent picture of him and his type. They are quoted verbatim:

#### "MY EXPERIENCE WHILE I WAS AWAY FROM HOME.

"This story is written by a boy who left home to seek the fortune of the world. This story is true. This boy has been away six months.

## "PART I.

## "CHAPTER I.

"One afternoon when I came home from school I went to the store for my mother, when I came back I went to my room and changed my clothes. Then I went down to meet some friends of mine. We went down to Coney Island. After we spent our money we started to go home. They lost me in the crowd and left me flat. I walked around the boardwalk until twelve o'clock, then I went to sleep under the boardwalk. When I woke up it was about ten o'clock.

"I went to the station on Stillwell Avenue and started to beg. When I begged about seventy-five cents I went to the Coffee Pot and ate. Later in the afternoon I was walking down the street when I spied a crap game. I got into the game and started to play. After two hours of playing I won about five dollars. Then I quit the game. I went to a show then came out and went to sleep on the subway.

"When I awoke it was about eight in the morning. I then went over to a friend of mine's house where I washed up and ate. We then started to play cards. Around two in the afternoon we went to a show and came out about five o'clock. When he left me and went home I met some friends of mine who also were away from home. We hung around Fourteenth Street till around one when it started to rain. We went on a roof and fell asleep. When we woke up it was about four in the morning and the streets deserted.

"It was about six in the morning when we went over to Johnny's house. When we washed up and ate they put on the radio and started to sing. Later somebody knocked at the door and everybody kept quiet and didn't move. Johnny then peeked through the key hole and came back and told us it was a cop. We told him he was crazy. Fifteen minutes later we opened the door, the cop came in and asked us what we were doing there. We told him we were only sleeping up here. He then brought us up to the station house for suspicious character. When we were let out it was about twelve o'clock.

"I went down the subway and went to New York around East One hundred First Street where I hung around for a couple of days. Here I met George, Johnny's brother.

"I slept in a hallway that night and got up about seven in the morning. When my friend's father went out in the morning I came up stairs and went to sleep under the bed. We slept until twelve o'clock noon then ate and went to a show. Around six we came out and went up the house to play cards. George's father gave me a quarter and told me to go home. I took the quarter and went up the roof to sleep.

"In the morning I went and bought a pair of sneakers and a sweater. I then went to a show which lasted two and one half hours. When I came out I went over to a Coffee Pot and ate. When I finished I looked at the time and went to another show. When I came out I went over to Broadway and bought papers and went selling them, when I finished selling the pink editions I bought fifty white editions. When I finished selling them it was

about one o'clock. I went into a restaurant and ate and then went over to the house. I counted up my profits which were three dollars and fifty cents. I then went to sleep. The next day I went down swimming and later ate and hung around Sixth Street a while and played handball with some friends of mine. Around four o'clock I went over to Times Square where I bought papers. I bought fifty papers which cost me one dollar and fifty cents. I sold the papers for a dime and made three dollars and a half. I went and bought fifty more papers and sold them. Later I went home and went to sleep. I made seven dollars profit on this Saturday night.

"When I got up the next day I went over and watched a ball game until four o'clock. Then I went up the house, packed up my clothing and went to sleep.

"When I got up Monday morning I left the house without telling the landlady that I was leaving. I then went over to New York got dressed and hid my old clothes. I went to a show and played cards that night. When I counted up my money that night I found out I had thirty-two dollars and ninety cents. I went down to the subway, bought a *News* and *Mirror* and went to sleep.

"(To be continued.)"

School is apparently an excellent place in which to study distinctive relationships between personality and behavior, no doubt due to the fact that school brings out the various nuances of children's attitude toward authority. At school the delinquent and non-delinquent problem child misbehave quite differently. While teachers usually complain of the unsatisfactory work and scholastic standing of both groups, the character of the complaints with regard to non-academic problems differ markedly. In addition to grumbling about the lack of interest a delinquent child shows in school work, teachers find fault with the ways in which they spend their time at school. The time taken up by school is so grudgingly relinquished by the delinquent that every opportunity to make the classroom another neighborhood street is eagerly exploited. Rowdiness, unmanageable boisterous overactivity, playful inattention, quarrelsome and uncontrollable behavior are the school's complaints against children who are also truanting, or stealing, or running away from home. Conduct disorders in the classroom accompany delinquency in the community. On the other hand, teachers object to the personal attitudes of non-delinquents rather than to more active misbehavior. Personality and emotional disturbances at home usually carry over as such into the school. The non-delinquent child combines poor school work with a disagreeable attitude of

superiority, antagonism toward the teacher, temper tantrums, timidity, and shyness, or even crying spells. When similar personality traits are manifesting themselves in the home one suspects that home and school, parent and teacher, have a great deal in common—in the child's mind, at any rate.

The following two cases bring out the different ways in which delinquent and non-delinquent react to school:

Jack entered kindergarten in September, 1927, when he was five years old. He remained in the class for one year until he was six and then entered 1A. His conduct mark was A in kindergarten and 1A. His mark in work B in kindergarten, 65 in 1A. He was promoted to 1B where he received D in conduct and 72 in work. He was promoted to 2A. For 17 days Jack did such poor work that he received D in work, being deficient in reading and spelling. His conduct mark was B. In October of that term, he was placed in another 2A class where he received C in conduct and B in work. In 2B, his conduct mark was C, work B. In 3A his conduct mark was so poor that his work also suffered and he was not promoted. Jack's teachers feel that he could do much better work if he would pay attention and not misbehave. A psychological examination in school indicated an I. Q. of 127.

Jack's teachers explained his low conduct mark on the basis of his showing off in class, disturbing other scholars. When he is scolded, he laughs at his teacher and shows no remorse. Throughout he has shown the same tendencies; showing off in an effort to get the laughter of the other pupils, in being impudent to the teachers when he is reprimanded, fighting with the other pupils and trying to be the boss. He would lie to the teachers to excuse himself and often would simulate ill health to remain away from school when he had difficulty there.

His only stealing in school took place the end of this January and consisted of his taking 10 pennies from the hand of a 1A pupil. He was seen and apprehended by a schoolboy marshal. Jack's stealing outside school dates back to his taking money from his mother's purse when he was still very young. Later he used this money to buy guns and other toys. He admitted to his mother stealing fruit and crackers this past winter. Twice in October, Jack and another boy stole change from the agent at the booth of a Broadway elevated station. It was after his apprehension on the second offense that he was referred to us. Jack sneaks into movies frequently, but first learned this habit as a group activity.

In spite of Jack's misbehavior, the teachers admit that he is likeable and always seem willing to give him another chance. The principal of the school has been interested in Jack for over a year now.

Jack is a delinquent. His school maladjustments express themselves in both his work and his conduct. Thomas, although 15, has never stolen anything, never bunked out or committed sex offenses.

His I. Q. is around 140, but he is doing poor school work in a grade three or four years below his intelligence rating. Here is what teachers say about him:

Although the family have moved a great deal, this is only the third school that Thomas has attended. When he entered the junior high school he did good work and was very soon advanced to higher grades. But at the end of last term his marks for the double class of 8A/8B are poor.

English .....	70	Shop .....	90
Latin .....	50	Geography .....	70
Mathematics .....	65	Drawing .....	80
History .....	65	Music .....	Passing
Science .....	65	P. T. ....	Passing

Two of Thomas's teachers report that they believe Thomas to be far above the average student. However, he has no friends and his conversations with the teachers are chiefly about philosophy. He believes that he has no memory or will power and that the Fates guide him. He claims there is no God and talks about the transmigration of souls. When asked why he has no friends he claims there is no one who interests him.

The boys in his grade have nothing in common with him. He is a very sad child, always serious. He frankly tells the teachers that he knows more than they do. However, he admits that no one knows everything and that he believes even Edison is over-rated. He is very idealistic, and only works in the classroom when he is interested. He is only interested when taking the lead. He day-dreams. He has a perfect way of ignoring the teacher and the work, which is very disconcerting to the teachers. He has excellent manners and thanks the teachers for their interest when they talk with him. He tells his teachers he does not know what it is he wants to do when he has finished school. He says last term his father wanted him to be a doctor; this term his father wants him to be an electrical engineer. The teacher showed the visitor soap models that Thomas made for the Latin class and they were very fine, indeed. These two teachers are anxious to know how to handle Thomas, so that they can help him make a good school adjustment.

In spite of the brevity of some of the foregoing abstracts, the poor and varying adjustments of problem children to friends and their inadequate recreational interests have already suggested themselves to the reader. More careful analysis of their maladjustments along these lines brings out some significant ways in which the two groups differ. These differences can be summarized as follows:

(1) The non-delinquent child has frequently no friends, or at best a few companions with whom it gets along badly. Recreational interests and activities are quite often limited, when they exist at all, to one or two social outlets, *e. g.*, music, reading.



(2) The delinquent boy or girl's friendships and play life show much more variation:

- a. He may have many undesirable social contacts.
- b. There may be but one very close friendship to which the partners make most unequal contributions; one leading, the other following. (Differences in age and intelligence may be important factors in establishing the closeness of this bond).
- c. The delinquent may have no friends at all. In these instances there may occur an unwholesome relationship with a chance acquaintance.
- d. Recreational life bears a definite relationship to the number and type of acquaintances. The less serious type of delinquent plays with his gang on the street helping to organize other kinds of excitement when opportunities for stealing into the movies do not present themselves. More serious delinquents engage in no play, or, at best, enjoy a selected activity (*e. g.*, shows, or trips) with but one companion. (Compare with non-delinquents above).

In general one of the most outstanding characteristics of a problem child—be it delinquent or not—is its undesirable relationship in one of several ways to other children, and its inability to enter into wholesome organized recreational opportunities offered by Y's, scout organizations, extra-curricular school activities, or even local supervised playgrounds.<sup>10</sup>

Why do children have trouble adjusting to their peers? Why is one child a good sport and another a bad loser? The psychiatrist is expected to answer questions of this sort, since psychic conflict frequently underlies these maladjustments. Part of the present study was given over to careful psychiatric interviews with each child. Some children had many interviews in order to learn, among other things, about the disturbing nature of their conflicts.

Some psychiatrists believe that all juvenile crime is caused by personal or intrapsychic conflicts. Our studies do not entirely support this point of view. Evidence has already been adduced to show that external or sociological conflicts, *e. g.*, bad neighborhood conditions, may be powerful factors in the causation of delinquency. Moreover it would appear from our experience that there are some delinquent children whose delinquency is due to an absence of conflict. These are labile, suggestible children without resistance or individuality. Not having sufficient personal drives they are at

<sup>10</sup> This finding is corroborated in part by studies which show a definite correlation between the incidence of juvenile delinquency in a community and the lack of recreational facilities.

the mercy of their environment<sup>21</sup> and accept without a twinge of conscience any pleasurable opportunity that presents itself. They are exploited by older boys with more definite predatory aims. They talk about their misdemeanors with the objectivity of a New York *Times* reporter. Here is a case in point.

Arnold, a boy of nine, steals and runs away from home with his older sister.

Arnold is placid and indifferent but becomes very active, restless and fidgety when in the company of May, his sister. He seems quite fatigued at the end of the day. Both his father and his foster mother feel that he is easily led by May. This condition has persisted for many years. There has been no decided change in behavior in the 17 months they have been together in a foster home. However, he is less hard to manage when May is not around. He submits to authority then. He seems to be fond of May. He will take her beatings and put up very little resistance—hardly ever defends himself. He is not usually quarrelsome with neighbors or children but will take a hand in any arguments that May takes part in.

Arnold has no special abilities or interests. He is attending a boy's club at the Colony House, where he also has a library card. He often goes there to look at the pictures in the books but does not read. He has shown some interest in the animals at the Zoo, where his foster mother has taken him on several occasions. He is given small chores to do about the house. He does not do them particularly well. He occasionally attends the movies when accompanied by either his father or his foster mother.

He associates with both boys and girls of his own age. They are usually the children with whom May also plays. He has not many friends that he has chosen himself and has no special chums. He is a follower.

Abstracts from his examinations confirm this sketch of him.

Arnold is pale, thin, and underweight. His physique is poor. He presents a rather characteristic picture of a thin underweight child; overactive, rather mentally dull, and suggestible.

It is remarkable that he is as friendly and outspoken as he is. Having regard to the life he has gone through and the difficulties he has had (he lived with a mother who was a prostitute) one would expect to find him much more apprehensive and shy. But he tells his story in a calm, detached way.

Due to his chief qualities—his suggestibility and his lack of individuality—one feels that he could be very easily led. He does not appear to have any strong individual drives. He would easily come under the influence of anybody who wanted to exploit him; *e. g.*, his sister.

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<sup>21</sup> Such children are always potentially delinquent. One might speak of them as pre-delinquents. Whether they become more seriously delinquent or not depends to a large extent on the chance nature of their friends and opportunities.

The boy is very outspoken in the way he blames his sister for all his wrongdoing. He claims that he would not steal if it were not for her. She just makes him do it, even if he does not want to. She threatens to beat him and tell on him and get him into trouble, if he will not do as she wishes. He seems quite unable to defend himself from her and is rather pathetic in this. He seems genuinely anxious to get away from her, but has not the intelligence or the drive to know how to do it.

He demonstrates some affection for his foster mother but this affection appears to be more childish dependence than anything else. He does not seem to have any very strong ties attaching him to anything. His interests lie in any play activity that happens to be around. One wonders whether he has any initiative of his own in the matter of games and play material or whether these are always chosen by May too. (In May's favor though it must be pointed out that the boy's lack of shyness might be due to the support he gets from her in the way she stands on her own feet for both of them.)

Side by side with his limited interests are his limited desires. He does not seem to need a great deal. It takes very little to satisfy him. He lives in what is going on at the moment. His past experiences and reactions, traumatic as they have been, do not seem to have left a very strong impress upon him. He is not the kind of boy who would ruminate about any of the experiences through which he has gone. He is quite a follower and joins with anybody in taking up whatever is going on around him. He does not seem to have any marked inner mental life at all. He lacks imagination, has no special wishes, and denies that he ever dreams. He accepts his school readily, finding it satisfactory enough.

It is worth while pointing out that no case of "insufficient conflict" was found among non-delinquent types of problem children.

While it is true that some children are drawn into crime by lack of healthy resistance, it is equally true that most of the children studied suffered from conflicts of various kinds. Some of the children in both groups were affected by the same general type of conflict. But these conflicts were never equal in importance within the two groups. Moreover, conflicts related to the same source, *e. g.*, sex and family, frequently had dissimilar connotations. The meaning of the conflict remained fairly constant, however, for any one group.

The most frequent source of mental strife for any type of problem child is his relationship to his family. This type of conflict is easily the most outstanding one for delinquents. For non-delinquents, however, conflicts with other children and with their relationship to self are almost as important as feelings about family. As suggested above the nature of this family conflict is not exactly

the same in both groups of cases. When the inner mental life of a delinquent shows evidences of dissatisfaction with his relationship to his family he is reacting to a feeling that the home is failing to provide him with emotional support, perhaps that he is unwanted, or he is trying to unloosen ties which he feels are binding him to earlier immature relationships. The family conflicts of children who are *primarily* delinquent do not show the influence of subtle jealousies, of fixation on one member of the family, of antagonism against another. They show little evidence of dissatisfaction with the insufficient amount of attention they are receiving from a selected kin, or of feelings of guilt concerning their own methods of stirring up a closer and more emotional relationship. These more delicate, refined emotional disturbances come out in the psychiatric exploration of the deeper mental life of non-delinquent types of problem children, and sometimes in the examinations of those delinquents whose anti-social behavior has been designated as *secondary*.<sup>12</sup>

Here is an example of the more frequent type of mental conflict disturbing a girl of 11 referred to the clinic for serious incorrigibility. The present feeling of insecurity which this girl's earlier unfortunate experiences engendered are seen in both her conscious and unconscious mental stream. The following excerpt is from the psychiatrist's report.

Mabel is referred to the clinic because of her stealing, destructiveness, cruelty, truancy and incorrigibility.

Mabel is mild mannered and quiet in spite of the above series of complaints against her. There is nothing coarse or vulgar either in her appearance or behavior. She is dressed fairly neatly and is fairly attractive physically. The restlessness mentioned in her history was not in evidence during examination. At first she sits somewhat tongue tied, a little apprehensive as though she felt she was being brought to the clinic for punishment. She brightens up and becomes more social as soon as she realizes that our interest in her is a friendly one.

She appears to talk reliably and openly to the examiner. All that she says agrees with the history. There was only one overimaginative statement in which she claims she has two sisters in the country, whom she visited this summer. These may be her cousins. When questioned about her relationship to these girls she stated that they had said they were her sisters.

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<sup>12</sup> These group differences in the nature of conflicts with family agree with the different types of discord found in the home. See pp. 80-81.

She frankly admits her various misdemeanors; in fact she is too frank about them. Her emotional tone in relation to her behavior seems rather inadequate. She is superficial in her feeling about her troubles. She does not seem to care about or realize the implications of her behavior.

She spoke with a little more emotion, however, in discussing her earlier life, especially as it related to her aunt and her mother. She seems to have a definite reaction to the time she spent alone with these two women. At this time, she states, her aunt taught her to steal and encouraged her truancy. The mother, on the other hand, neglected her. Her whole life at this time seems to have been rather full of uncertainties. She was afraid that she was going to be taken off by her father, whom she did not know very much about. She remembers on one occasion, when she was four, her father visited the house to take her away. Her mother made her hide under the bed. (There may have been more of this uncertainty in the atmosphere than she remembers now.) At the present time she is afraid of the dark. She fears she may be carried off by a man. (This may be a general reaction, common to children of her age, but it may have a more specific connotation for her.) She dreams colored men will take her off (her mother had visitors for immoral purposes); and is very much afraid of being placed in the cellar (a disciplinary measure of the foster mother. She ran away over night recently because the foster mother had threatened to put her in the cellar for stealing).

Ada, a girl of 17, also shows a mental conflict in relation to members of her family. Its insidious, insinuating nature; its subtle implications and less palpable quality, contrast markedly with the clear cut disturbance upsetting Mabel's mental equilibrium. Ada is no delinquent. Her outward trouble is the way she bids for teacher's attention by telling fanciful stories. The following abstracts are from the psychiatric social history and psychiatrist's reports:

Ada is not progressing in school and is constantly bidding for attention among teachers by telling fanciful tales. She lies about her home conditions, saying that her mother is seriously ill and that her home is undesirable. This term she went to a teacher upon whom she has "a crush" and told her in great confidence that she listened to a crippled girl passing on a dirty story which she had overheard a teacher telling to a small group of colleagues. Since Ada cannot dominate all her friends she has espoused the cause of crippled children who attend the school. She assists them through the building, sits with them at lunch time and is their constant companion.

The chief method of discipline in the home has been the mother's plan of "talking it out" with Ada. Mrs. I now realizes that there has been too much "preaching." During the last year, when the mother begins to talk with Ada about her conduct, Ada disappears into a bedroom and stays

there until she thinks the mother has forgotten about her behavior. Now she will not discuss anything with her mother, and is very secretive about all her doings. Her brother, Max, refuses to be dominated by his sister, and attempts to punish her by yelling or scolding her. Mrs. I then steps in to interfere with Max's efforts at discipline. Mrs. I claims she has tried to appeal to Ada's sympathy, her pride in her parents, her parents' pride in her, her religion, etc., but nothing seems to gain the reactions that the mother is so anxious to obtain. Ada claims that she hates her brother, but her reactions toward him vary markedly, depending upon whether the mother is present or not. Mrs. I claims that her son is by nature an affectionate boy, and devoted to her. He resents the way his sister treats his mother. Mrs. I is perfectly sure that she has never shown any of her children any special favors. Planfully she has held aloof from showing too much attention to either of them, for fear they might think she was showing partiality. Even when Ada was ill as a baby she would not permit relatives or friends to spoil the sick child. She does not know when or how the friction between the siblings developed. She believes that it came about in their early play life. Her boy would naturally run to his mother and hug her and the girl stayed off and waited to be asked for a kiss. Their behavior toward her has not changed in these ways. Ada is demonstrative with her father, but Mrs. I feels that this demonstration is very insincere.

The above account was given by the mother, who is like her daughter in every way. They both use the same mannerisms, intonations, phrases, and have the same affectations. Mrs. I tells an interesting account of her own family background, which has probably an important bearing on her daughter's trouble. Mrs. I had a very strict father, but a more kindly mother. She was definitely repressed and inhibited by this influence. She claims she had no childhood at all (she worked selling the caps her father made) and that she is only getting her childhood at the present time playing with her children. (This is probably quite true and for this reason she is in direct competition with Ada. That is why she likes to represent herself as young as possible, both in her appearance and in her ideas and in her aspirations. She tells with a great deal of hidden joy how she is able to wear a suit one size smaller than her daughter.) Her husband's home life was in direct opposition to hers. He had all the freedom he wanted and he turned out a happy, carefree individual, whereas she turned out a highly repressed and complexed individual. (It is possible, too, that she became quite dominating when she left her family's protection.) But as a youngster she believes she did everything very successfully—in fact from her point of view she always does everything very successfully, except handling her daughter in which she admitted she has failed dismally.

The I's have been married for 27 years, the first 20 of which she was most unhappy with her husband, and during which time she suggests they came pretty close to separation. The incompatibility was probably brought about by their difference in temperament—he was carefree, she was tied up with



her parents. During this period she wanted none of her children and tried definitely to produce abortions. She also tried to do this in connection with Ada, but not as energetically as in connection with the others. (Because of this relationship to her husband and her own lack of early play life, and also because of her feeling of guilt in connection with her children, she tied herself up with them when they finally arrived.)

She is very sentimental and gushing and it is very easy for her to spill her emotions over them. She refers to her boys in the terms of a lover. She says frankly, "I love them," and says it with all the feeling and enthusiasm that one can evoke over this relationship. She does not say that about her daughter, although she claims she does care for her too. (One suspects that because of her youthful complex she does not want to grow up, and because of her relationship to her sons she looks upon Ada as a definite rival for their affection. It is interesting in this connection that Stephen, the only boy at home now, and Ada get along remarkably well when the mother is away, but the moment she returns they squabble about insignificant matters. Ada also called attention to this aspect of her relationship to her brother.) Mrs. I tells an interesting little story which brings out her relationship to her two children very well. She was away one afternoon and was coming home late to supper. Ada prepared the meal. Ada put it on the table, asked Stephen to eat it and not wait for their mother's return. Stephen refused to do this and Ada has refused to cook for him since. Mrs. I says she scolded Stephen for not eating the meal and that she is sure Ada will not cook for him again, but in her heart of hearts she was glad that Stephen waited until she returned and really hopes that Ada will not cook again for him.

Ada is a very pretty, Semitic girl, well aware of her beauty and physical attractiveness. Evidently she is especially fond of her hair, as she tells the examiner a long story about how unnatural its curl appeared in a picture she had taken and how she had thought she had spoiled the picture for this reason. She also spends a good deal of time making herself up after the interview—powdering and rouging and fixing her hat.

Evidences of her conflicts come out in so many ways—the dramatic, emotionalizing attitudes, the poses, the self-consciousness, the choice of language, the frequent change of attitude, the blockings in her story about her family, the artificialities, the very unstable attitudes towards friends, the easy crushes; all these are outward signs of inner mental disturbance, of a lack of psychic stability due to conflicting family ties.

It is very difficult to get Ada to talk about her family, and equally difficult to prevent her from talking at length about everything else. She states frankly that she does not want to speak about her mother, that "they have not been speaking to each other for days." After a little cajoling by the examiner Ada bursts into a paean of praise for Mrs. I, praise which is obviously not genuinely felt. She then proceeds to a discussion of her two brothers extolling very elaborately the virtues of the older one in order to make her denunciation of the younger brother who lives at home appear

more genuine, but also more devastating. (It is worth while pointing out that when the older brother was living at home, Ada's quarrels with him were very bitter.)

Sufficient material has been abstracted from these two case histories to indicate the difference in the quality of a type of conflict which most frequently agitates both groups of problem children. As already pointed out the next most common sources of mental conflict met with in non-delinquent disturbances are children's feelings about their relationship to other children and to themselves. Such children, especially girls, are frequently discouraged by their lack of popularity and of prestige.<sup>13</sup> An unsatisfied desire for adventure—romantic in character by the girls, of more exciting nature by the boys—is often expressed by poor school work and emotional perturbation. On one occasion the clinic's attention was drawn to the case of a girl who without a single friend in the school was writing her teacher fictitious letters about herself, calling upon the school to investigate the overactive social life she was leading. School, like home, is complicated by many personal relationships calling for delicate emotional adjustments with other children and with adults. A child's feeling of inadequacy can easily be hit off by an unsympathetic, scolding teacher. The teacher, saying just the wrong thing, causes the student to flare up into an antagonistic temper—really an attempt on the child's part to hide from both itself and the class its own weaknesses.

The case of Matthew, a 12-year-old boy with an I. Q. of 138, who was referred to the clinic because he had no friends, is interesting enough to report. It shows how dissatisfaction with oneself, and with one's position in the group, can bring about scholastic difficulties. Matthew day-dreams in class, is considered unhappy by his teachers, and is doing unsatisfactory work. A partial account of the psychiatrist's report states:

This boy shows a very remarkable feeling of superiority, which he openly expresses in the most naive way. He has established for himself, intellectually at any rate, a very definite ideal to which all other things should

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<sup>13</sup> This conclusion is confirmed by a study of the phantasy life of two hundred high school students made by Miss Ruth Munroe and the writer, reported at the 1931 meeting of the American Orthopsychiatric Association, but as yet unpublished.

be subordinated. This ideal involves fame, achievement, money and comfort; but no companionship. He would like to be one of the foremost electrical engineers, be respected by everybody, and live, attended by Chinese servants, a life of comfort. He claims he will never marry, nor will he have any close friends. He wants to keep away from people because they are silly. Further evidence of this remarkable attitude of superiority is seen in the terrible seriousness with which he takes himself. Only on rare occasions does he permit himself to smile. He is usually lost in philosophical discussion, in which he makes plans for setting the world aright. His reading, too, which is of a very highbrow nature and is indulged in with his usual seriousness and profundity, gives him a feeling that he is aloof from the world and that he can sit off and survey it. He also does this in connection with his day-dreams. His day-dreams are given up to making grandiose and elaborate plans for very large success.

Such thinking and planning are certainly out of proportion to the need for rising in a world in which he thinks everybody else is rather stupid. Obviously such an attitude of superiority must arise from definite feelings of inferiority in non-intellectual directions, and it is not hard to discover evidences of these. There is first his poor group adjustment. Matthew admits he has had only one friend in all his life, and that was in California. He had to pay attention to a boy in Brooklyn because this fellow attached himself to him. He was glad to get away from this boy because he was scatterbrained, and enjoyed playing and having a good time. Matthew thinks play should also be directed toward a definite goal. Play is another field in which this boy is poorly adjusted. The dislike for fitting into a normal group pattern which this boy shows probably also arises from the fact that he cannot do the things other boys do, especially in the matter of games. He has no play life to speak of. He has attempted unsuccessfully to play with the Scouts and at Camp. He rationalizes his failure for this inability by pointing out the fact that he can get for himself all any organization has to give him. Aside from reading his only occupation seems to be walks with his mother and sister. He does admit to an interest in animals.

Matthew confesses that he is worried about his appearance. He thinks his feet are too large, and his nose is too big. There is some objective basis for his feeling in these matters. But having regard to the calm, cynical way in which he is supposed to take the rest of the world, he shows a little more emotion about these incongruities than one would expect. In spite of his dislike for getting hurt and being pushed around by other boys—very obvious effeminate traits—he does not feel that his body is effeminately built. On the contrary he thinks he has a good man-sized and man-shaped physique; as he has. While oversensitive about boisterous contacts he says that he does not think he is a coward and will be willing to go up in an aeroplane and tackle certain dangers. This fear of getting hurt is probably inculcated by his mother's attitude toward his hernia.

Another source of disturbance for Matthew is his mother's poor use of English, although he claims he has no feeling about his foreign birth. The family is Swedish.

Very few delinquent children feel dissatisfied in this intense way with themselves or their relationship to other children. As a rule they fit all too readily into the undesirable social patterns of their group. Playing the game of follow the leader (in crime) is more than satisfying. Occasionally one runs across a boy who is dissatisfied because he is outside of things. Such children resolve their conflicts by direct action, not by daydreaming or philosophizing. The following case illustrates the interesting point of view of a boy who felt that leadership in delinquency was necessary in order to make himself solid with the gang into which he had as yet been uninitiated:

Luigi has quite a good deal of charm for a boy coming from his social background, and makes friends readily. He is frank and outspoken. He goes after what he wants in a very direct fashion. His lack of self-consciousness is exceptional. In spite of this directness and his low social standards he is not at all impudent. There is a certain boyishness about him which makes him very likeable. He establishes a good rapport with the examiner, as presumably he does with everyone. He gives the impression of needing affection and recognition. He himself admits that he wants to be liked. When he does not get this recognition he institutes immediate reprisals, *e. g.*, fighting.

His drive at manliness is very obvious. He wears long pants although he is very short. He is proud of a recent increase in his stature. He now feels that he will be able to hold his own in encounters with other boys. He is also sensitive about the way other boys call him names. He feels that if he can join the local club and become one of the gang, this will not happen. He feels himself out of things all around. At school, too, he is unhappy when the boys fight him. He gives the impression that he is being harassed by life at the present time. His dreams are bad. He dreams detectives are chasing him. He has very definite mental imagery about himself, visualizing himself in acceptable rôles. He also thinks about the unjustness of other people's actions. (For example, his mother recently hid his skates and he still is unhappy about it.) In connection with his stealing episodes, he claims that he was dared to do these things and did them in a spirit of bravado. He hoped by these actions to win the approval of other boys. (These delinquencies do not seem to have sprung from any deep-seated viciousness.) He is also stimulated in this type of delinquent activity by his frequent visits to sensational movies. He has a definite sex interest, but it is of rather immature nature at the present time. While he does not seem to have any strong sex urge of his own, he knows what other boys are doing and is interested in hearing their stories. He does not seem to have done any experimenting himself. Part of this sex interest is connected with a general curiosity that he shows for his surroundings, and part is related to his desire "to make the gang."

In the case of Matthew the psychiatrist was also interested in investigating the question of how large a part of conflict over sex matters was playing in the etiology of his difficulties. Sex conflicts create various types of problems. More careful analysis of erotism in these children shows that there is a correlation between varieties of sex conflict and types of behavior. Generally speaking one found that delinquent children are disturbed by a strong heterogeneous sex urge which caused more irritation than conflict—especially around puberty and early adolescence. These children frequently manifested a strong drive to express themselves sexually; a desire related to their love of excitement, sensational street enjoyments, and sex activities of their friends. Frequently this desire was being satisfied without conflict. Among the delinquents of higher intelligence and more inhibited social background whose demands were more rigorously repressed one met cases of stealing related to a less conscious sex disturbance. This sex disturbance—sometimes of a homosexual nature—was producing tension for the child. These tensions were relieved by another type of wickedness, as it were, of less serious social import. In this way the child received a vicarious emotional satisfaction but experienced much less feeling of guilt.<sup>14</sup> One excellent example of this kind of substitutive experience is worth presenting:

Horace, a boy of 15, is referred by a high school because he is "a problem in truancy accompanied by some protective lying and some phantasy lying, as well as forgery of checks totalling \$28 in order to carry on the truancies, plus a total unconcern over the whole matter and an all consuming inquisitiveness to see what will happen next."

Horace, according to his examiners, is a very interesting boy from many aspects. First, his physical appearance and make-up are quite unusual. He has very heavy features, is much overweight, and has large fat deposits on the chest. These things make him very unprepossessing. However, he is quite interested in his appearance, as shown by the care with which he had dressed, by the fact that he asked for a mirror to fix his tie which he had taken off to permit of physical examination.

On the emotional side he shows a distinct schizoid trend. He talks about his most serious misdemeanors with an entirely objective attitude. With

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<sup>14</sup> We do not think it is necessary in explaining behavior of this kind to make use of the hypothesis that the misdemeanor actually committed, *e. g.*, stealing or forgery, bore some symbolic relationship to the sex act. It is not denied, however, that thoroughgoing psychoanalytical procedure might in some such cases disclose this symbolic connection.

the greatest emotional unconcern he produces highly significant material. (Such as the fact that he disrupted the telephone system so that the school could not get in touch with his parents *re* his truancy.) In fact one listens to him quite intrigued, never knowing when he is going to come out with some very astounding remark from a clear sky.

From our conversation with this boy we have the feeling that there is a good deal of repressed and disguised sex interest in his personality make-up. It is also possible that there is a good deal of unconscious conflict about it, which we have a feeling may be related to his present misdeemeanors. We have the suspicion that we are dealing with a boy who has a marked homosexual interest and that his stealing is the result of the mental conflict related to it. First, there is the reticence with which he discusses sex matters and also the sensitiveness he has about his body. (It is interesting in this connection that he has suddenly refused to undress in front of his mother. While in the office we had him strip to the waist for what we call a psychophysical examination, since we felt that this boy had some interesting attitudes toward his own body which might be revealing. He took off his clothes with much reluctance and at the first opportunity he asked for permission to put them on, claiming that he was cold, although the office was quite warm. When we told him frankly that we thought that his truancy and delinquency might have a sexual basis, he immediately blurted out, "I knew you were going to say that before I came here." Then when we pointed out to him that his desire to be a moving picture actor (to be discussed presently) might be based upon this conflict, he replied all too spiritedly, "My only reason for wanting to be an actor is because I like it."

In connection with this boy's erotic desires he tells very interesting stories about his sexual activity this summer, in which he claims he was the abused partner in masturbatory experiences at camp. He admits asking to sleep with a certain group of older boys. When he got among them, found out what was going on and to what he was being subjected, he ran away a number of times. But he always came back. He was very evasive and difficult to reach, as he is in most things, about these experiences of the summer. He admitted very frankly that he was ashamed of them. While at camp, too, as well as at other places, he disliked stripping because of the fun the boys made of his body. He admits feeling sensitive about his breasts, although he claims he did not know the name for them. He did know the vulgar name of his penis, but refused to use it because "he does not want to say words of that nature." He claims he does not know how he differs from girls.

Horace declares that all his delinquencies began this fall when he returned from camp. He claims very definitely that previous to this fall he did not engage in truancy, forgeries or stealing. (This is true.) He believes that his present truancy, stealing, and lying, all center around one thing, namely, his love for the movies. This seems to be a recent passion with him. This love for the movies is distinctly related to his sexual interests. Horace is more



or less in love with certain actors on the films, *e. g.*, Ramon Novarro and John Barrymore. He talks about Ramon Novarro with much emotion, saying that he has his picture at home and that his one desire is to get out to Hollywood to be with him. He will have nothing to do with actresses, in the same way that he has nothing to do with girls. All the money he gets he spends going to the movies—as often as three times a day. Some pictures he has seen three and four times. His ambition is to become a movie actor. He has very romantic and sentimental ideas of movie actors, phantasying about the ideal type of relationship that he would have when he got out among them. His desire to go to the movies is compulsive in nature. Horace will get up in the morning and suddenly decide that he is not going to school that day, that he is going to the pictures instead. And so it must happen. His one great regret is that *his mother* does not take him to pictures in New York. All the money that he steals is spent on shows. (It would not surprise us to learn that this boy has very definite sexual excitation when viewing his favorite movie star.)

The lengths to which he goes to cover up his truancy is, we think, indicative of his conflict. He telephones the New York Telephone Company to disconnect the service for a day, so that the school will not telephone the mother. He disconnects the phone himself for the same purpose. He is also much worried; he fears the student councillor (a woman and mother substitute) will learn about his truanies.

The connection between stealing, truancy and homosexual conflict is fairly clear in this case. But in addition to illustrating the way a disturbed sexual impulse can express itself indirectly in delinquency, Horace's history is also illustrative of a more inhibited and inverted type of sex difficulty. This type of sex problem is usually related to the conflict which affects non-delinquent problem children. The delinquent child<sup>15</sup> relieves itself of sex conflicts by reacting to a lesser evil, *e. g.*, stealing; the non-delinquent child attempts to work through such difficulties by emotional reactions. In both groups of cases, however, there is a repressing, inhibiting influence in the home and a close bond between the child and some other personality (usually the parent) which contrast prominently with the looser standards and relationships in the homes of lower grade delinquents who desire to "express themselves" perhaps well, but not wisely. Here is an example of a non-delinquent boy attempting to resolve a sex conflict by abstinence. He denies himself friends and social activities, thus keeping away from tempta-

<sup>15</sup> It must be kept in mind that we are discussing in this instance a special subdivision of the delinquent group.

tion. The overattachment and inhibiting influence of his mother are also evident.

Hyman, a boy of 15, is sent for study<sup>4</sup> to the clinic by a high school teacher because he is asocial.

The history shows that he is "goody goody," is not the least bit interested in girls, and keeps away from off-color stories or pictures. The mother fearing that her only child might learn to masturbate—which he does—sent him at the age of 12 to the family doctor for advice. (The father and mother are separated.) Unfortunately, the mother, because of her overanxiousness, spoiled this plan by having Hyman make many follow-up visits there. She questioned Hyman herself about his sexual activities, but "he looked at her with such a feeling of hate that she did not bring up the matter again." Mrs. J admits that she is much concerned about sex matters herself, having recently read "The Well of Loneliness." (Sex incompatibility was one of the causes of her difficulties with her husband.) Even before reading this book she was afraid her son was developing along homosexual lines.

The mother's overattachment to her son began to show itself as soon as he was born. Hyman was breast fed until he was well over a year old. His mother dressed him until he was eight years of age, fed him until he was five, and they have always slept in the same room. The following anecdote reveals the intensity of this mother-child relationship.

At the age of five and a half, Hyman entered kindergarten at public school. One day soon after he had started school, Hyman failed to fold some flowers correctly and the kindergarten teacher mildly rebuked him. When he got home he cried and told his mother what the teacher had said to him. He did not want to go back to school and for two weeks ran a very high temperature and was sick to his stomach. After the temperature had abated Mrs. J took Hyman back to school and went to class with him. Before he went into the classroom he vomited. He was taken care of by the mother, but left in the hands of the kindergarten teacher. Mrs. J went to school with the boy every day until the end of the term and every day he vomited before he went into the classroom. This habit continued for the first couple of terms, Mrs J taking daily care of his vomiting attacks.

At the present time Hyman has no ability along mechanical lines and is not interested in drawing. He loves music and shows great interest in it. When he was a baby and he was particularly irritable, Mrs. J would turn on the victrola and the baby would soon go to sleep. He has taken some lessons on the piano, but he refuses to practice. He enjoys listening to music when alone and will stand up, if necessary at the opera or a concert, in order to hear it. He attends the moving pictures alone about once a week and seems to like them. He does not have any preference for any special type of movies. He enjoys reading and reads only "classics." He never brings home cheap novels to read. He does not like athletics or outdoor sports of any kind. He likes to spend his spare time at the museums or picture galleries.

He has never been to camp. He is very generous about assisting around the house. At the present time there is a maid in the family and Hyman dries the dishes for her at night and takes care of any rubbish or garbage that is to be taken downstairs. He is particularly good at doing errands. He is an excellent shopper and invariably brings home a bargain. He has never had any friends and has no crushes. He belongs to one club, which the mother insisted upon his joining two years ago. He still attends the meetings, but he only goes because he knows his mother wants him to go. Mrs. J explains that when Hyman was younger she had to push him out of doors to play with other children, but he would return by the back door in a very short time.

The psychiatric report states Hyman has the typical asthenic appearance, which is characteristic of many introverted people. His introversion is very obvious. He is evasive, asocial, thoughtful, lethargic and extremely difficult to approach. He is quite cynical and unfriendly toward the world. He feels that anything which comes to him must come from his own efforts, that nobody will help him in any way—nobody but himself. Even the clinic's obvious attempts to help him were met with this cold, frigid type of response. It was frequently necessary to draw things out from him and there were some things we could not get him to talk about at all, *e. g.*, sex matters. He seems quite worried and concerned, as though he found life a very heavy, difficult thing.

He did admit that he was somewhat ashamed that his physique was not more of the athletic kind. He seems to feel a definite inferiority along these lines. It appears that he really wishes he could engage in the more active games of the other boys and finds his inadequacy a handicap. His interests, are of course, very limited and he has few, if any, friends. There is probably hardly one person to whom he is closely attached; he does not appear to have any warmth of feeling toward anybody.

The boy has a very hard and fast code. He is quite stubborn and inflexible. He knows what he wants to do and sticks to it with much persistence. This stability or overstability manifests itself in connection with his vocational aim. He is sure he is going into business—nothing else will suit him. Any other suggestion was given cold consideration and refused. It is possible that he gets this vocational ideal from his mother, since she seems to have influenced him a great deal. His mother seems to be the final arbiter in all his activities and he leans on her influence, frequently doing what she wants him to do even though he does not feel it is right. Lately, however, he claims that he is more independent.

We believe that he has a very feelingful and sensitive attitude toward life. He reads a great deal and seems to have a feeling for problems around him. He has some very mature points of view which have resulted from his reading and rumination rather than from any direct contacts with the world.

Hyman gives the examiner the impression that he is experiencing a sex conflict. Evidence for this conclusion is seen in the terrific blocking he

displays on the subject of sex, his restlessness during sleep, and the fastidiousness of his appearance. He is decidedly overscrupulous and extremely possessive. His overinterest in garbage and food, together with squeamish attitudes and overnice interests, might be considered pathognomonic of an anal erotic character.

Another rather important type of conflict met with in connection with psychiatric examination of delinquent children might be designated as a "cultural or race conflict."<sup>16</sup> As a rule this conflict begins with the parents who, brought up in a foreign style of life, introduce friction into the home in their efforts to practise communism in a capitalistic state, or free love in a monogamous society. This disregard for, or opposition to, law and order on the part of parents, in addition to disrupting the calm routine of the home, provides the kind of example children find it easiest to imitate.<sup>17</sup> Even where parents are not outspokenly opposed and antagonistic to American traditions and social patterns their efforts "to belong" and even to speak our language—are accompanied by friction and heat which help to produce in the home of delinquent children the kind of discord already outlined.<sup>18</sup> This more refined type of cultural conflict also disturbs the homes of non-delinquent problem children. In these homes the conflict is also likely to express itself through the parent-child relationship. European parents frequently intensify the adolescent revolt of their American trained children by invoking old world conventions with which American neighbors have never disciplined their children. An interesting example of this type of cultural conflict complicating an emotional mother-son relationship comes to mind:

An adolescent boy of 16 was referred by a teacher because of repeated school failures and disobedience. His intelligence was excellent. The mother,

<sup>16</sup> Cultural conflicts in our experience are a little less important in the case of non-delinquent behavior deviates.

<sup>17</sup> The writer has been impressed, for example, by the rather primitive standards of lower class Polish peasants now living in the crowded slums of Brooklyn, and the unmoral example they set before their children. Such conditions also obtain, of course, among other low grade immigrant nationals who are beset by a difficult and arduous economic struggle. Alcohol and promiscuous sexual intercourse are the strong meat found most satisfying as relief and relaxation from this strife.

<sup>18</sup> See pp. 80-81.

a spirited Scot, visited the clinic to see what could be done to make her boy finish high school. She "did not hold with the modern newfangled disciplinary methods," When she went to school in the old country she was put in the corner and made to wear a dunce cap for not learning her lessons. Any nonsense on her part was soon quashed by the stick. She was equally unsympathetic to the recreational freedom given children in this country. Mrs. K believed children should be seen and not heard. Couldn't we do something to get McGregor in the house by nine o'clock at night so that he might study? The psychiatrist did not have the courage to point out that in spite of these harsh disciplinary principles which Mrs. K claimed to practise, McGregor was a spoiled child. As a matter of strict fact, this boy had always gotten his own way with his mother, and had never been made to do anything distasteful. It was only when his mother felt McGregor pulling away from her—he had just acquired a girl friend—that she became alarmed and attempted to get others to fall back on obsolescent disciplinary practices<sup>19</sup> in order to tighten up the slack.

The following case illustrating a cultural conflict represents a borderline condition of pre-delinquency. The character of the domestic discord and of the social conflict in this instance cuts across what is typical of both non-delinquents and delinquent groups. There develops in this setting a semi-delinquent type of behavior:

Josephine is the daughter of very respectable but poor Italian parents. She is 15 years old but has no friends. As soon as she gets out of school Josephine must hurry home to help with housework, leaving behind her classmates to enjoy the varied extra-curricular program the school offers. During recess and lunch period Josephine sits listening to accounts of "good times." She has no romance to tell about. Occasionally she goes to the movies, but always with her family.

She is never allowed out alone at night. "Nice" Italian girls are always chaperoned. Kept away by her parents from the school dance, this modern Cinderella was provoked to resistance. She improvised her own fairy god-mother—the teacher—to whom she told imaginary stories of seduction and attempts at suicide.

The chief varieties of mental conflict met with in studying our cases have been mentioned. Occasionally one comes across other kinds of mental conflict not already classified. One is surprised to find that very few cases of "conflict of interests" were encountered. Perhaps children are no longer being kept at school when they would rather be working. Children are being given oppor-

<sup>19</sup> In all fairness to the disciplinary measures Mrs. K. advocated it should be pointed out that McGregor claimed he started to cause trouble in school when he first came to this country and discovered that corporal punishment was not used.

tunities to choose the school they prefer to attend, to elect the type of curriculum in which they think they are interested, and to select from a rich list of extra-curricular recreational outlets their own forte. All these available choices may be eliminating conflicts engendered in children's minds by an authoritative procedure. Moreover, when an occasional child complained that he was unhappy because "a commercial course is detestable," or because he wanted "to go on the stage instead of finishing high school," a deeper more fundamental conflict was usually found to explain the superficial attitude. In one or two instances high school children were mentally disturbed because of the poverty of their family or because the neighborhood in which they lived was too undesirable and their homes too shabby to show their friends. An illiterate parent is also a source of concern to an educated high school adolescent. Conflicts related to surroundings may make a child unhappy but not a delinquent. The protest and antagonism against authority aroused in connection with "conflicts of interests," however, may be strong enough to explode in anti-social violence.

### III.

So far an attempt has been made to generalize a little about the nature and causes of delinquency. From the material of these generalizations and from clinical experience it is possible to sketch individual varieties of delinquent children;<sup>20</sup> and, what a doctor would call, special clinical syndromes.

Serious delinquents—serious because their delinquency is deep-rooted in obstinate causes—can be classified as follows:

First, there is the sexual pervert, or invert, whose disturbed sexuality is correlative with a physical constitutional bias. The first example on page 11 is indicative of this type of delinquent. These children belong to both sexes and are usually very intelligent. They experience, especially when older, severe conflicts in relation to their behavior and family attachments with which their conduct is frequently involved. There are other types of sexually

<sup>20</sup> This procedure is valuable because it focuses attention on the etiological nuclei of juvenile criminality. This differentiation is also important for the purpose of organizing specific treatment and determining prognosis in a case allied to any of these groupings.



perverted children, who are usually dull and low grade. In their case their disturbed sexuality is more passive in character. They are being exploited by unscrupulous adults or older companions. A change of environment is often able to clear up the sexual aspects of their difficulties. The more active and organically conditioned inverts described heretofore cannot be so easily helped. Endocrine therapy, administered early enough in the course of their development, might be useful in modifying its direction. A change of attitude toward them on the part of society would be even more efficacious.

Inversions of this kind are frequently practised by children diagnosed as psychopathic personalities (see p. 86). But such personalities spread their delinquency beyond the sexual field. Suffering from a diseased twist of their mind they cannot be counted upon to behave rationally in any social situation. Their behavior is unpredictable. Change of environment has little influence upon it. The seriousness of their conduct bears a definite relation to the extent of their psychopathy. In addition to larceny, incendiarism, general incorrigibility, such children have been known to commit murders under the impulse of special tensions and provocations. Unfortunately they get into newspapers more readily than into mental hygiene clinics.

A more attractive variety of this type of personality,<sup>21</sup> perhaps related to race, is included in our series of cases but has not as yet been mentioned. The expansive, uninhibited, oversocialized psychopath is more pleasant to deal with but no more easily held in check. The free-handed way in which such adolescents disregard *meum* and *tuum* is pleasant for only half their large number of friends. Frequently these young people go on an emotional and social frolic and behave like mild manics:

Rastus is 17 years of age, and one of the most attractive colored boys any member of the clinic staff has seen. He smiles his way into hearts and purses. His mother, herself emotionally unstable—the heredity of psychopathic personalities is frequently bad—had been saving for Rastus' education. Rastus, believing in the educational possibilities of social contacts, stole the money and took his friends on a trip to Washington, "borrowing" an idle parked car for the purpose. Rastus returned a week later, no wiser or

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<sup>21</sup> Dr. William Healy of the Judge Baker Foundation has called attention to other subdivisions of this concept.

sadder, to keep an appointment with the judge. (He knows only the best people.) Although objecting to the stationery, he now spends his time writing letters to girls and showing their pictures to new friends who share his dormitory in the state mental hospital.

Closely related to the more malignant type of psychopathic personalities and their delinquent behavior are the delinquencies and personalities of encephalitic and epileptic children, unfortunately met with frequently enough to force psychiatrists to keep a clinical eye open for them.

The emotionally unstable type of mentally defective child is frequently a delinquent. Its behavior is quite like that of the less attractive type of psychopath. The poor *quality* of its brain, rather than any special *mental twist*, results in serious errors of judgment. Under the influence of crafty associates or a strong emotional impulse this so-called "moron" of the newspapers loses the little head he has and commits an act of violence. Our clinic turnover was too high grade and a little too young to include this type of case, but the writer remembers the description of the murderer of a subway clerk recorded in "Haunch, Paunch, and Jowl" who was undoubtedly a mental defective of this kind.

The psychopath's personality is twisted and distorted in all directions like the unorganized shape of an amœba. The psychopath, too, throws out into its environment pseudopodic feelers with equal ease. There is no necessary central core of conflict around which his behavior constellates. If such a nucleus exists it is a secondary accretion picked up through contact with the environment. The primary cause of the maladjustment in such cases is not the conflict but the constitutional lability and instability of the psychopathic child which make possible the development of these secondary conditions. Contrasting with these children in which one might say their whole psyche is in conflict with its surroundings are cases of non-psychopathic children whose delinquency is built upon a primary, well organized, and circumscribed mental conflict. Their psyche functions very well and their behavior is quite socially acceptable until some special mental peculiarity is hit off. Then follow violence, cruelty and compulsive actions comparable in character to the conduct of the psychopath. Some of the special, circumscribed, inflammatory, psychic trends of these psychopathoid (?) children are sadistic, masochistic and exhibitionistic

in character.<sup>20</sup> These trends lie midway between the underlying conflicts upon which they are built and the serious anti-social conduct in which they express themselves. The underlying conflicts are usually caused by very intense distorted intra-family relationships. The anti-social conduct may take the form of savage cruelty to siblings, friends and animals, unusual sex manifestations, or spectacular robberies. The psychopathoid personality is illustrated by Bobby's behavior.

Bobby is only nine years old but his behavior is bad enough to warrant drastic environmental and psychiatric treatment. He has been sent away from home to help relieve his conflicts while receiving psychotherapy.

Bobby enjoys shooting and torturing cats (sadism), fighting viciously (masochism and sadism), stealing and practising sexual perversions with other boys. Guns are his main source of enjoyment. After undressing for bed at night he runs naked into the parlor whenever there is company (exhibitionism). The money obtained by stealing is used to purchase guns. He engages in attention getting behavior (a form of exhibitionism) at home and at school. Fighting, clowning, wetting the bed, wearing imitation glasses are some of his ways of keeping in the limelight. Because of his meanness toward them he has few friends. Without adequate cause Bobby will hide a chum's belongings, and assault him when he objects. He shows a vivid and diabolical imagination. The neighbors and local shopkeepers protest in vain to his parents about the ingenuity he shows in annoying them.

Bobby's father was a captain during the war. He still spends his summers in training camps using up the limited family income on military equipment. Bobby will listen for hours to his father's war stories. It is agreed by the family that Bobby is going to a military school. Mr. L's interest in and satisfaction from his military activities began after his marriage which, together with most of his earlier life, was a failure. Bobby's mother is sexually frigid and an occultist. There are two other children in the family. Because of Bobby's antagonism his elder sister was removed from the home some time ago. Bobby does not believe that the younger sibling is his real brother. He hits him, disciplines him, breaks his toys and "wishes he would go away for five years, then the house would be clean." Bobby is seldom disciplined. Because of her religious conviction (acquired from her mother who dominates her) Mrs. L believes children outgrow their difficulties. Mr. L has a furious temper and rarely trusts himself to punish Bobby moderately. Moreover, he, too, is opposed to punishment, having himself suffered from the disciplinary measures of an older brother of whom he is very jealous.

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<sup>20</sup> These children are usually called neurotic. This term seems to us too loose and too broad to be used in connection with these children. Moreover, truly neurotic children are seldom delinquent. They are emotional and personality problems.

In spite of Bobby's behavior he is well liked by many adults including some of his teachers. A happy nature and a fearless disposition are responsible for their favor. He plays well by himself and has a strict code of honor. Having given his word to a pal to engage in some delinquent activity he feels compelled to go through with it. He can suffer severe physical pain without complaint. All in all Bobby is a puzzling child.

The discrepancy in Bobby's personality results from a mental conflict which is disturbing the adjustments of an otherwise pleasing personality. Bobby gets along reasonably well until his complexes are hit off. This variety of non-psychopathic type of personality should be distinguished from the dissatisfied or unsatisfied personality deviate who has been described at length in previous pages.<sup>23</sup> These two groups of children are alike only in that their personality conflicts are primary, and their delinquency, although frequently serious is secondary. But their personalities are markedly different. The dissatisfaction of one group of children permeates most of their reactions; it is not limited, as in the case of the psychopathoid child, to a few areas of contact. The reason for this difference is to be found in the nature of the mental conflicts underlying these personality deviations. In one case there is an especially significant conflict—usually of psychoanalytical interpretation. In cases where the unsatisfactory personality reactions are more general the nature of the conflicts is less specific too. The unsatisfied or dissatisfied type of personality is not necessarily feeling the prick of a disguised Oedipus, Electra or castration complex. It may be feeling the pinch of broader intrafamilial tensions, of more general domestic jealousies. The influence of an unsympathetic stepparent, for example, may be the force pushing the child against itself, thus developing egocentricity and anti-social reactions. Moreover, the dissatisfied or unsatisfied child's behavior may be determined to a larger extent by environmental influences. A change in economic status, or even undesirable neighborhood influences, may help to shape the outward expression of its inner conflicts.<sup>24</sup> The psychopathoid child's behavior is much less molded

<sup>23</sup> See pp. 88 *seq.*

<sup>24</sup> The following questions might be raised at this point: Why is this type of child delinquent at all? In what ways does it differ from the non-delinquent problem child discussed at length in the foregoing pages?

This differentiation in behavior is brought about by three causes: Duration of external irritations, physical drive, and personality organization. Sec-

by such influences. The pattern of its conduct is more inflexibly determined by the pattern of the conflict itself. Altogether there is a specificity and a determination about psychopathoid conflict, personality deviation, and conduct which differing from the less specific theme running through the organization of a non-psychopathoid ego warrants the separation of these two types of delinquent children.

Before passing on to a brief discussion of mild delinquent types one group of more serious delinquents remains to be considered. The delinquency of this remaining group is largely environmental in origin. The mental conflicts these children have are secondary to the unfortunate experiences they have undergone. Juvenile human nature is resilient and rebounds from infrequent assaults. But where children have been brought up by inhuman parents amid sordid surroundings, shipped as unwanted from home to home, and allowed to shift for themselves over a number of years picking up undesirable companions, habits and play life, these opportunities for making only the wrong choice stamp in delinquent patterns of reaction and develop in the child a feeling of insecurity which frequently continues indefinitely in spite of the happiest changes in their surroundings. In brief, the seriousness of their status is due to the length of time they have lived amid extremely bad social conditions without any chance of learning to behave differently.

Where children have been subjected to less serious social pressure, or even very bad living conditions for shorter periods, the buoyancy of their personalities has an opportunity to function. The chances of restoring such children to integrity are good, provided opportunities and resources can be found for them in a restitutive environment. Their prognosis is good because their mental conflicts are usually secondary to surroundings, and tend to disappear as these improve.

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ondary delinquents have tried unsuccessfully by non-delinquent measures to squeeze satisfaction out of their surroundings. The external causes for their maladjustment have persisted and voided these earlier methods. The child whose behavior ends in delinquency has more "motility" (physical and mental urge) than the child whose behavior ends in an emotional disturbance. Finally the secondary delinquents have a better developed and socialized personality. They are not bound up with themselves to such an extent.

Closely related to this group of mild delinquents—the term mild refers to the favorable outlook rather than the character of their immediate behavior—are the Luigis, the Peters and the Jakies, whose misconduct results from a cultural or race conflict. Occasionally a more intelligent, inflexible foreign child will allow the adaptation process to warp its personality and thus add a telling factor against restitution. As a rule, though, intelligence is a safeguard against delinquency, and the intelligent child's protest is more likely to express itself in intellectual snobbery, cynicism or other destructive social traits, rather than in delinquency. An interesting and rare example of a personality distortion due to a cultural conflict expressing itself in delinquency is reported in the publications of another clinic. A Greek boy had acquired a feeling of superiority and a disrespect for American traditions from his father, a boot-black, who taught him about the greatness that is Greece. Andropoulos' behavior, fighting and plundering, was his anti-social way of trampling on our flag and of resolving personal conflicts.

Delinquency, secondary to inner mental sexual conflict uncomplicated by constitutional bias, need not cause parents too much alarm. Frequently the misbehavior is precipitated by the additional physiological irritation of puberty or by some wayward experience in which the delinquent has played only a passive part:

A girl of 15, who, a little time previously, had spent the night in imperfect virtue with a sailor began to steal from department stores. Thereafter the stealing recurred around the beginning of menstruation.<sup>28</sup> It disappeared, however, when the girl was relieved of the feeling of guilt connected with her amorous conduct.

The favorable prognosis in such cases depends, to a large extent upon the kind of supervision and treatment the child receives during any period of stress and strain, and the success of psychotherapy in removing the primary mental conflict. It sometimes happens that this conflict is only partially removed because of the patient's antagonism stirred up by poor parental methods in handling the difficulty, or because of the incomplete success of the psychiatrist. In such instances the more serious delinquent act may be replaced by less damaging behavior or eccentricities of one kind or another. One boy substituted for thefts of money innumerable visits to the

<sup>28</sup> It would be worthwhile investigating further the relationship of dysmenorrhea to certain cases of stealing.



movies. A girl who had previously stolen her classmate's purses subsequently lied herself out of a good job while under psychiatric treatment.

Delinquency based on a "conflict of interests" gives way as a rule when rational changes in the child's program are introduced. A boy who was made to attend both day and Hebrew schools crowded the maximum pleasurable returns into the few minutes free for recreation by stealing from local stores. When play time was increased by eliminating supplementary classes, less exciting adventures, somewhat prolonged, yielded equal returns. Coming within the experience of laymen, too, are instances of marked improvement in behavior due to replacing by a satisfying job an unacceptable school routine. The improvement of the child's status in the home brought about by this change frequently helps along the adjustment. In the clinic's series of cases there was one instance where the child's ability to add something to the very limited family income by a full time job changed his "unwanted" position in the home to that of a much respected and considered member of the family group. The boy's independent satisfactions derived from occupying himself with something in which he is interested are likely to keep him permanently out of the delinquent class.

Two other interesting groups of mild delinquents can be paired. Reference has already been made to children who get into trouble because of lack of personal resistance. These are the children who without individuality are dependent upon others for leadership.<sup>26</sup> If this guidance is disreputable, the non-resistant child "follows the leader" into delinquency. There is another small group of cases in which delinquency is related to lack of physical resistance of the child. (These cases do not all belong to the group in which poor physical development (see pp. 85, 86) is complicating behavior.) Delinquency in these instances is more likely to be related to domestic emotional strife, which, frightful and persistent, batters away at the child's nervous system until it breaks.<sup>27</sup> The child, having

<sup>26</sup> See p. 93.

<sup>27</sup> This condition of hyperkinesis, or hypermotility and incoordination, seems to us to be a true neurosis—to be distinguished from a psychoneurosis. These hyperkinetic children are in *physical conflict* due to the tensions to

lost through nervous wear and tear all physical resistance, goes on an hyperkinetic jag<sup>28</sup> and spreads destruction in its path. Delinquency is only part of its misconduct. Exaggerated hyperkinesis can express itself in any kind of explosive, irritable, uncontrolled behavior. Fortunately, given a chance to "sleep off" their condition by a prolonged change of environment, these hyperkinetic children return to normalcy. The clinic dealt with one case of this kind:

Mossie, eight years old, was referred to the clinic because of stealing, fighting and quarreling, restlessness, cruelty, inattention at school, phantasying, and resisting authority.<sup>29</sup>

The boy's home life is without routine because of parental discord. The mother and father—the family is reasonably well off—are too busy fighting each other to worry about what their child eats or when he goes to bed. These tensions have persisted in the home since the birth of the child. In fact he was born amid parental incompatibility and unhappiness.

At the time of his examination he showed difficulty in concentrating, tired very easily, and gave evidence of extreme psychomotor overactivity. He was restless, overtalkative and more than spontaneous. His verbal productions were characterized by a looseness of association amounting almost to a flight of ideas. At times he was incoherent. His mood showed a most inappropriate elation.

It is easy to understand how lack of physical, mental, and emotional control correlated with a shattered nervous system, gets Mossie into serious difficulties. Mossie was sent to a hospital to relieve him of the domestic tensions responsible for his breakdown. After six months he returned to his home in perfect shape. Improved conditions at home are likely to prevent a relapse.

An exciting, younger case of this type came to the private attention of the writer:

A girl of three and a half had a psychopathic mother and a psychoneurotic father. The home was a nightmare. Quarrels, bickerings, indecisions, threats of separation and divorce, and an absence of routine disorganized this little girl's life and her central nervous system. When brought to the office of the psychiatrist she staggered through the door, bumping

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which their nervous systems are subjected by emotional friction in the home. If a *mental conflict* is present too, as in psychoneurosis, it plays a secondary rôle in the etiology of their disorder.

<sup>28</sup> Such children, if young enough, actually become when tired as incoördinated as an alcoholic.

<sup>29</sup> The number and variety of this boy's difficulties are illuminating.

herself apparently without pain. (Her nervous system was numb, as in acute alcoholism.) Removed from her parent's home she behaved during the first few days, especially in the late afternoon when she was a little more fatigued, like a hypomaniac. Running purposelessly around the house, caroming off furniture, getting in a drug cabinet, turning on gas jets, she kept the house in wild disorder. During this period further evidence of her insensitivity came to light. One day while playing around the drug cabinet she swallowed half a dozen aspirin tablets without effect. Another day she swallowed a number of luminal tablets. The members of the private home where she had been placed, anticipating a rest for her and themselves, were delighted; however, the tablets had no effect on her excitement. Margaret could also eat huge quantities of pepper without discomfort.

It required about five months in a quiet restful environment to cure this juvenile neurosis.

In closing off the list of mild delinquents only brief reference need be made to the fact that the personality deviate (the unsatisfied or dissatisfied child)<sup>20</sup> coming from a fairly good home does not behave in an antisocial way for any length of time if the external causes for its maladjustment are short lived, and if opportunities for self-satisfaction are rapidly fed it.

The outstanding value of a careful clinical study and psychiatric analysis of a case, be it delinquency or other variety of juvenile maladjustment, is in relation to therapy. Clear formulation of the underlying concomitants of children's behavior problems makes it possible for the psychiatrist to outline a concrete and specific treatment program which checks, point for point, with the etiological factors isolated. The basic factors of juvenile delinquency having already been discussed at length, we now pass to a final examination and evaluation of the methods which the clinic has found most efficacious in combating these more deeply rooted causes of anti-social conduct.

#### IV.

Since both primary and secondary delinquency<sup>21</sup> are related, among other important things, to unsatisfactory conditions in a child's recreational life and unwise or limited choice of friends, it is not surprising that the most frequently used therapeutic measure deals with these two fields. In seeking the right kind of recrea-

<sup>20</sup> See p. 100.

<sup>21</sup> It will be remembered that this term was suggested for cases of delinquency growing out of a primary personality dissatisfaction.

tional program for a delinquent child the psychiatrist does not write a blanket prescription of "play." Depending upon the child's behavior and personality different kinds of recreation have different therapeutic values. The psychiatrist therefore attempts to be as specific in his selection of this type of medicine as he is in the choice of drugs. For delinquent children organized and carefully supervised recreation does many things. Membership in settlement clubs, for example, gives the expansive, bossy child a chance to enjoy executive leadership in socially acceptable ways and the weak, colorless boy opportunities to develop interests and individuality with which to combat exploitation. The sexual invert or pervert finds in the school's dramatic or art activities sublimation and congenial companionship. Mixed groups, dancing under sympathetic supervision of teacher or settlement worker, help to remove the sting from conflicting suppressed sex desires, and release related tensions which frequently seek outlet in stealing, or shoplifting. For those children whose delinquency is part and parcel of sociological conditions, or related to cultural conflicts, such organizations as scouts,<sup>22</sup> settlements, Y's and school clubs place before the child models of better and happier relationships. The distinctive American quality of some of these institutions also encourages the process of assimilation. Helpful temporary relief for child and parent from home discord is also supplied by these same agencies. Mention has already been made of the unsatisfied delinquent child's need for ego inflation. Next to parental approbation this ego satisfaction is best obtained from a specially selected series of recreational activities. Excellence in the performance of these gives to the child a satisfaction of its own. It also evokes from important adults much needed praise. The psychopathoid child is best helped by psychotherapy, but a worth while adjunct to this treatment is the opportunity to reenact with play material the drama of its unconscious. Bobby's fondness for toy guns and his delight in playing with soldiers may be satisfying impulses which otherwise might express themselves in sticking pins, or even knives, into baby brother or leading the neighborhood gang in an attack upon the school's windows.

<sup>22</sup> The writer considers the scouts' emphasis upon honor, companionship, the congenial acceptance of authority, excellent weapons with which to combat juvenile delinquency.

Closely allied, both in importance and execution to the "play" way of treating juvenile delinquency is the psychiatric social service approach. As already pointed out, the value of a good psychiatric social history, based on direct observation of home, school and community conditions, to the study of the causes of any act of delinquency cannot be overestimated. The machinery supplied by a psychiatric social service department for finding opportunities to carry out the clinic's recommendations of all kinds is no less important. But in addition to these duties the worker or visitor is called upon to perform—very successfully as a rule—a series of functions connected with direct treatment of the case. Some of these latter duties are much like the psychiatrist's. But inasmuch as the worker frequently comes to grips with the problem in the setting in which it occurs, her services can sometimes have a more lasting and beneficial influence. The psychiatric contacts that the worker has to make in treating delinquency are varied. She hurries away from a home in which she has attempted to remove some of the causes undermining the delinquent child's morale, to keep a luncheon appointment with an adolescent girl whose stealing is a reaction to the feeling that she is unwanted. Later on the worker will see the mother alone, too, and give her insight into the mechanisms of the grievances which she is vicariously projecting on her daughter. Or the worker may have to visit a school to explain to teachers why Johnny prefers truancy to arithmetic, and what concretely can be done to change this condition. Frequently the intelligent supervision and encouragement she gives a mild delinquent is sufficient to hold him off from misconduct until a permanent change in his behavior is effected by treatment of its deeper causes. When the psychiatrist, due to his sex or idiosyncrasies of his personality, is unable to probe successfully for the mental conflict responsible for delinquency, a happier and more social relationship between skilled worker and patient can frequently be established resulting in the removal of psychic blocking and the uncovering of significant material.

The psychiatric social worker's contribution to the study and treatment of delinquency can be summarized as follows: She obtains valuable objective historical data dealing with its causes by first hand contact with the broad background in which the behavior is functioning. The worker provides the machinery for carrying

out the clinic's therapeutic suggestions as they relate to choice of friends, recreational opportunities, of complete change of environment. In her capacity of "adjunct psychiatrist" she provides in certain cases supervision and companionship. In others she helps to probe for buried conflicts. As liaison officer between school and clinic (or other community agency) the worker interprets clinical findings and suggests ways of executing them. In dealing with parents she may attempt to impart psychiatric insight; or in lower grade families her effort may be to build up the morale of the home, to change parental methods of discipline, thus helping to give the delinquent child "a feeling of belonging."

The relationship between a child's delinquency and his behavior at school is confirmed by the frequency with which attempts were made in treating delinquent children to change conditions in the classroom. Equally important as the foregoing therapeutic measures were recommendations with regard to school procedures. Various kinds of suggestions were given by the clinic to schools. Harry who was running away from home to sell papers was successfully placed in a trade school. The boy<sup>33</sup> who was being educated day and night was permitted to drop supplementary Hebrew classes. One boy, a pre-delinquent, was rapidly losing interest in his school work and finding life more exciting truanting with undesirable associates. It would be difficult to say whether the educational help from a special tutor which the school supplied or the tutor's interest in this boy was more efficacious in changing his behavior. Perhaps both factors were important. Personality factors operate inside as well as outside the school building. Luigi, the boy who stole "to make the gang," was changed to the classroom of a more sympathetic teacher, who found opportunities to give him a little friendly attention. Luigi feels "he has made one dame." In some cases a boy was given a fresh start in a different type of school. It was suggested that Ray, a responsive chap of nine held down by callous conditions at home, would always be unhappy and delinquent in a hard and fast routinized atmosphere. He needed, in addition to change of home, a less formal school setting. Both of these were found for him in the country. As already pointed out, young adolescents sometimes react to a job better than to school.

<sup>33</sup> See p. 117.



One or two of the clinic's cases were successfully taken out of school altogether. Where strict but only the most impersonal kind of school discipline seemed indicated, as in one case where an intelligent, overbearing fellow of 17 having no respect for law was attempting to ride rough shod over everybody, a military academy was recommended.<sup>34</sup>

From the foregoing examples it will be observed that scholastic measures recommended to offset delinquency dealt in a general way with changes in school, curriculum or teachers.

Treatment procedures so far outlined have been of importance to delinquent or non-delinquent problem child. The differences between the causes of emotional and of anti-social problems come out in connection with the relative frequency of the next two groups of treatment recommendations. Change of home and surroundings has as a therapeutic measure for the delinquent group the same relative importance that intense psychiatric treatment has for non-delinquents. Social background being more frequently the primary cause of delinquency, and mental conflict being more frequently the root of emotional difficulties, the selective application of these treatment procedures can be readily understood.

The minor treatment recommendations were about the same for both groups. Hospitalization was recommended in two cases of delinquency. The case of a child suffering from a neurosis has already been dealt with.<sup>35</sup> The other child was a psychopath and dangerous to the community. Extra-mural medical attention was also occasionally prescribed. Removal to camp<sup>36</sup> took a few tired boys out of poor homes and traumatizing background, and gave them rest, first-class supervision and satisfactory play life. "Big Brothers" sometimes took the place of deceased parents, and also helped to supervise boys whose behavior was related to parental neglect.

Due to the broadness and subjective aspects of the concept it is very difficult to measure *in quantitative terms* the successful or

<sup>34</sup> This was a case of delinquency secondary to gross personality deviation. The latter had developed through the treatment of a strict harsh father and an intimidated mother.

<sup>35</sup> See p. 119.

<sup>36</sup> A winter camp would be an excellent way of treating restless, fatigued delinquents.

unsuccessful treatment of behavior. Judging, however, from the disappearance or persistence of the symptoms for which the child was originally studied, the staff, checked by reports from schools, agencies and parents, feels that the results obtained by the clinic in the mental hygiene study and treatment of juvenile delinquency are 10 to 15 per cent better than those obtained in its treatment of non-delinquent types of children's behavior problems. While it is true that a few cases were not benefited by clinical study, an equal number of children were completely "cured" by the clinic's efforts, if one can believe teacher or parent who claims they are "entirely different boys." Between these two ratings of 1 per cent and 100 per cent success, most of the cases fall; the modal point lying between 60 per cent and 65 per cent. For non-delinquent problem children this point is located around the 50 per cent mark.

#### V.

What are the most successful ways of checking juvenile delinquency? Reference has already been made to the various prescriptions that were written by the clinic for this purpose. Which of these recommendations were most successful? From our experience a complete change of surroundings is the most efficacious way of terminating a delinquent career.<sup>37</sup> Since the findings from this study show that delinquency is primarily environmental in origin, this treatment procedure fits hand in glove into the underlying causes of this variety of misconduct. Change of environment took different forms. Hospitalization for six months, winter camp for four months, a foster home for a year, summer camp, an institution, a home in the country, a boarding school were some of the ways of taking a child away from bad social conditions, domestic discord, undesirable friends and recreation responsible for its delinquency. Reinforcing the clinic's conclusion about the effectiveness of this therapeutic measure is the corresponding finding that the chief reason for unsuccessful treatment was the clinic's inability to remove the child from its delinquent setting. The best therapeutic measure for handling non-delinquent problem children

<sup>37</sup> In Boston this method is used almost exclusively in connection with the Juvenile Court and the Judge Baker Foundation.

was the clinic's work in changing parental attitudes. This successful treatment procedure also calls attention to the underlying causes of children's emotional and personality problems, and how they differ from the causes of delinquency. Next in importance to complete change of environment as a way of combating juvenile delinquency, and closely related to it, is the improvement in home conditions obtained largely through the psychiatric social worker's efforts. In addition to helping remove domestic friction, partly responsible for the child's behavior, the worker was frequently able to improve the delinquent's status in the home by suggesting to the parents better ways of handling problems or by interpreting these problems in a more intelligent way.

Schools and teachers, by removing "conflicts of interests" or by handling delinquent children with more understanding, equalled in importance the work done in the homes by social workers. The social worker's contribution to the cure of juvenile crime was augmented, however, by her more direct contact with child and parent as "adjunct psychiatrist."

"Big Brothers" acting as father substitutes, and thus giving juveniles a feeling of solidarity, were also found desirable treatment adjuvants.

While it is not possible to credit recreational programs with many full and independent successes in the treatment of delinquency, this partial failure was largely due to lack of resources in the community. By checking the number of times treatment recommendations were not carried out, it was found that the list is easily headed by "Recreation." Where it was possible to find the specific recreational outlet the clinic was looking for, the case was frequently benefited. Our experience would tend to show, however, that it might be very difficult to "cure" serious delinquents by only giving them recreational opportunities.

One of the main reasons for the clinic's failure to arrest a delinquent career has been mentioned—the lack of success in changing the delinquent's background. The next important cause of failure, and closely related to the previous reason, is the persistence of harmful parental attitudes toward the child. It frequently happened that a child's misbehavior improved at school when a teacher intelligently applied the clinic's findings, but persisted or

even became worse at home where the worker could make no dent on, say a stepparent's unsympathetic reaction to the child:

Phoebe, a girl of 14, was studied by the clinic because she was truanting from school and stealing from home. Her family claimed they could do nothing with her.

Phoebe's mother had no doubt spoiled her daughter, letting Phoebe have her own way in everything. Unfortunately for the girl, her mother died. The father, who thought his first wife very frivolous, remarried. The stepmother, by picking out and relating to her husband Phoebe's faults, made him believe Phoebe was "just like her mother."

In the clinic the girl herself pointed out the difference between her present status at home and the previous preferment she enjoyed. When her mother was alive, "she could have everything she wanted: silk stockings, clothes, spending money. Now she has to take what she wants." The only "good times" she has now are her week end visits to her aunt by whom "she isn't scolded all the time."

The clinic's worker visited the school and explained Phoebe's difficulties: her need for sympathy, for more friendly discipline, for friends and opportunities to express herself. The home was also visited from time to time by the worker in an effort to drive home the same message.

Six months later the school reported that Phoebe was now a leader in rectitude. Her parents acquainted with this improvement seemed both disappointed and sceptical. How could it be so? "Phoebe is bad through and through—just like her mother. You can't do anything for her. Maybe she needs an X-ray."

A set back at home similar to the clinic's experience with Phoebe sometimes occurred when a child returned from the country. Edwin was considered "a perfect gentleman" at winter camp, but his gentility disappeared a few weeks after he had returned to the East Side. Efforts were usually made by the clinic to guard against this contingency by working with unfavorable conditions in the home during the absence of the delinquent. Where a worker is able to bring the child back to a happier home in an entirely new neighborhood, the old dynamic associations have been broken up, and chances for permanent success are excellent. The coöperation on the part of the parents necessarily accompanying this procedure also bespeaks success.

The clinic's efforts failed in a few cases because the child's difficulty, having persisted for a long time, had been too deeply stamped in. This cause of failure was frequently complicated by

inadequate help from a new environment. Rose, a girl of ten, who had been born amid immorality and who had been a delinquent most of her life, was placed in a foster home. Unfortunately the foster mother, a very worthy woman in many ways, believed that Rose should be tied up in a large fish net every time she stole. Rose usually made the crime fit the punishment in severity. The constitutional nature of the psychopath's difficulties usually baffled both environmental and psychiatric treatment. The clinic felt that these mentally distorted children were too old to make the application of endocrine therapy worth the attempt.

There was a small group of cases of secondary delinquents—primarily personality deviates or psychopathoids—who would have been further helped by more intensive psychotherapy, and in one or two instances, by psychoanalysis. The clinic's failure to supply the specific type of therapy indicated for all the children in this group was due to lack of mechanical resources rather than to any hazy recognition of their needs.

This discussion of successful child guidance methods of treating juvenile delinquents brings to a close a study which has also acquainted the reader with a large variety of causes of anti-social behavior and ways in which these causes differ from those underlying non-delinquent types of problems. The main value of this study, it is hoped, will accrue to the delinquents themselves. It is next hoped that readers of this report will come to share with the clinic's personnel the feeling that there is no single and simple cause of delinquency, and therefore no neo-salvarsan for its treatment. Delinquency, like any other aspect of human behavior is as a rule a very complicated reaction to many interrelated factors. Its rational treatment depends upon the isolation of the less obscure ones through various examinations, and upon a clinic's resourcefulness and skill in finding and using measures to combat them. Since some of these influences upon behavior will always remain outside human control there is reason for believing that delinquency, or its equivalent form of misconduct, will always be with us. But although delinquency is not likely to disappear entirely, child guidance methods seem to be able to eliminate 60 per cent of it.

PSYCHIATRIC SOCIAL HISTORY FOR CHILD GUIDANCE  
CLINIC.

## I. IDENTIFYING INFORMATION.

Name:	Address:	Date:
Age: (exactly.)	Color:	School and grade:
Sex:	Nationality of child:	Occupation, if any:
Place of birth:	Religion:	Ordinal position in family.

## II. BEHAVIOR FOR WHICH CHILD IS BEING STUDIED.

*a. Complaints.*—First enumerate specifically existing complaints and their duration.

*b. History of Complaints.*—Take up each complaint separately and develop its progress thoroughly up to present status. What is the detailed nature of the complaint. When did it first appear. Under what circumstances. What factors mitigate or aggravate severity of complaint. Under what circumstances has the discordant behavior disappeared. To what factors in child's background is complaint related; playmates, family, relatives, siblings, teacher, doctor, school, neighborhood, sickness, etc. Does behavior have a special time or place factor. Did it develop suddenly or insidiously. What have been the methods used in handling each specific problem; by whom, what result. What is informant's explanation for the problem; what is her opinion as to its present severity. What does she think should be done to handle it.

## III. DEVELOPMENTAL HISTORY OF CHILD.

*a. Gestation Period and Delivery.*—Learn whether mother had a thoroughly normal pregnancy or whether it was disturbed by emotional or physical upset. What was her attitude towards pregnancy, what was that of her husband. Did this attitude change subsequently. Did attitude vary in other pregnancies. What was nature of delivery. Does she feel it was traumatic for her or child in any way, physically or mentally.

*b. Medical History from Birth to Date.*—What was the physical condition of child at birth with respect to general health, developmental anomalies, nutrition, weight. (Parent's attitude toward these things is important.) Proceed chronologically learning more about general health of child and specific sicknesses. Learn influence of any medical deviation upon parent's attitude and child's behavior. Pay special attention to convulsions, influenza, infantile paralysis, encephalitis, chorea and trauma. Do not be satisfied to have informant tell you about childhood sicknesses. Ask about them specifically. In case of any definite sickness obtain detailed information as to time of occurrence, severity, treatment. From informant learn both present status of child's health and child's estimate of its own status. In this connection pay attention to vague and indefinite pains, fatigability,



underweight (real or imaginary), underdevelopment, oversize, reaction to physical appearance, overactivity or lethargy.

c. *Early Development*.—Try to learn about nature of child's early gross movements; was child overactive as baby, restless and always on the go; or lethargic. Try to trace age at which various forms of locomotion appeared: crawling, assisted walking, independent walking. Did child cover a great deal of ground. When could child hold head up, sit up, stand up. Learn about handedness of child, also manipulatory skill and strength of musculature. When did child first scribble. When did child first use a word. About how many words could it use at 18 months, 24 months. Can they remember when child first used a sentence.

When did child get first tooth. How many teeth by two years.

d. *Early Habit Formation*.—Discuss early feeding methods and diet. Was child hard to please in food matters. Was child delayed in weening. Was parent worried about quality and amount of food child ate. What means were used to get child to eat; with what results.

About how many hours did child sleep during first six months of life. When was afternoon nap discontinued. How was retiring period enforced. With what results. What has been nature of sleep: disturbed by dreams, by demand for attention, etc. With whom did and does child sleep. How far does parent appear involved in child's sleeping habits.

At what age were toilet habits learned. What methods were used. Get specific and detailed data *re* enuresis.

Does child or home appear to have been much under emotional tension in connection with learning of various habits.

Were there any early sexual manifestations and of what nature. Did child show any interest in parents' body. Was there any chance for early sex trauma. What was child's early masturbatory experience. Did child show any of the so-called early sex manifestations; thumb sucking, nail biting, nose boring. What was done about it. Has child shown any sex preference, at what age. Did child show any unusual interests: excreta, looking, handling, questioning mother's pregnancy, etc.

e. *Early Personality Development*.—Was child as a baby good natured, jolly, happy, or fretful, changeable, irritable, cranky. Was child fearful, easily disturbed, easily annoyed, etc. (Get evidence for any of these by means of specific details—especially with regard to fears.) Investigate child's earliest relationship to other children; desire for and ability to make and keep friends, its relative enjoyment alone and with others (older, younger). What was its attitude toward its own and other children's toys. What were its reactions to advances. Did it make advances; to whom. Was child submissive, aggressive. Was child talkative, quiet, sensitive. Learn about child's early family preferences and apparent cause for them. Were there early jealousies between child and siblings. How handled. Was there any special reaction to other relatives. Was child affectionate, responsive, antagonistic to anybody. Was child influenced by anybody's death, or departure from home.

## IV. CHILD'S PRESENT BACKGROUND AND MAKE-UP.

*a. Later Personality Development.*—Continue as in III, *e*, looking for variations in personality or further evidence of personality trends previously established. Try to find out causes for any change or intensification of traits. Pay special attention to accidents, sickness (keep in mind infantile paralysis, encephalitis, epilepsy), deaths, births, removal from home of patient or others, intervening miscarriages, separation of parents, economic stresses, school adjustment, physical ineptitude, companions, vocation as likely influences on personality development.

With older children go into child's moral standards and loyalties, its relationship to groups. Also learn about older children's relationship to reality. Does it show good judgment, carry through plans, act practically.

*b. School Adjustment.*—Obtain the chronology of school progress. Learn about various schools child has attended and reasons for change. Have school authorities intervened in child's school work. Has child any special abilities or disabilities in school subjects. Has child received special coaching from parents or others on any subject. Has child any special interests in any subjects and how does it show this interest. How much time does child spend on homework. What facilities has child for quiet study. Have teachers commented on child's scholastic status. What are parents' plans for future education. What is child's plan *re* future education.

What is child's attitude towards school, toward any special subject. What has been its relationship to teachers. Have they commented on its behavior. Has child ever gotten into any special difficulties at school. (Obtain details.) What does child think of its own scholastic status, what do parents think. Under what conditions does child do good school or bad school work. What is child's attitude toward homework. What are parent's methods of handling child's attitudes toward school or homework or teacher.

Did parents themselves have similar difficulties. Has child ever shown signs of malingering to avoid school. What is regularity and promptness of child's attendance. What do parents do to overcome any irregularity. Does child day-dream in school, act restlessly and is he inattentive.

What is child's relationship to other children in class; friendly, leader, asocial. How does child feel about his size, his position in school group.

(Confirm with teacher where possible.)

*c. Recreational Interests.*—How much time does it give to play and recreation. Does child engage in extra curricula activity at school. To what school clubs or other clubs does it belong. What is its status in those clubs. What are its athletic choices. Is it active or passive in these. What skill does it show in games. Has it any special hobbies, such as collecting, printing, science. What are its reading interests. How much is it interested in movies, shows, music. Does it go in for indoor games and dramatics or dancing. Is it interested in outdoor activities, such as hiking, boating, camping, etc. Is it interested in parties or entertainments. Does it show an interest in games adequate for its years. How sufficient is the play equipment, its opportunities

for play and its play resources and outlets. Does its family join in the child's recreation. What is family's attitude toward child's play life.

*d. Sexual Adjustment and Development.*—Obtain outline of girl's menstrual history. How did she obtain and react to information *re* menstruation. What is girl's present attitude toward menstruation. Does boy show signs of puberty development. When did these signs appear.

Is there any evidence of masturbation now. Has child been caught in any frank sex experiences. Have there been rumors of such happenings. Has child witnessed sexual activity. How have parents handled these problems.

Does child like to display its body. Is it interested in the bodies of others. Is child interested in elimination.

How much sex information does child seem to have. Where did it obtain this information. Does child ask questions *re* sex, birth. How are such questions handled.

What is child's attitude and relationship to opposite sex. Is it overcurious, overmodest, dominating, overpassive. Has child very close companions, of what sex. Is child overinterested in its appearance.

*e. Vocational Adjustment.*—Does child work after school; hours, wage, type of job. What does child do with money. What is child's attitude toward this work. Do parents want child to work.

What are child's ideas about its future work. What would parents like child to do. Why.

In case of adolescents, what job does it now hold. How successful is it on this job. How many jobs has it held since leaving school. How does it get along with its bosses, its colleagues. What wage does it earn, what does it do with money.

#### V. FAMILY HISTORY.

*a. Parents Relationship to Grandparents.*—(Carry out separately for each parent.) Obtain usual statistical information on grandparents; age of death, cause of death, nationality, vocation, education, number of children, length of time in this country, etc.

What was grandparents' family relationship. Was their married life successful. Why not. What is parents' attitude to the married life of their parents. What was parents' status in their own home. Were they cowed, free, dependent or equal. Trace the relationship of this status to the personality of the grandparents. Were grandparents domineering, weak, unfair, religious, discriminating, unwell, etc. What was the nature of grandparents' sickness and what was parents' relationship to it. Did the grandparents suffer from mental disease, mental deficiency, nervous disease or physical defects of social or psychiatric significance. What was economic status of grandparents' home and what was its influence on parents. Was grandparents' home dominated by any special set of traditions. Are parents carrying on or rebelling against such tradition. What are the parents' attitude toward their own early home life. Do they show signs of strong emotional reactions toward it. What do they think about the educational, religious or racial status of their parents. Is there any feeling of inferiority or superiority

because of this. Were there undesirable social conditions in their parents' home, such as alcoholism, delinquency. How have these conditions affected their own lives. Was their early home life broken up by death, desertion, etc.; with what effect. Was there a stepparent in their life. What was their relationship to it. What was their relationship to their own brothers and sisters. Were they discriminated against in favor of the latter. Are any of parents' aunts or uncles, grandparents, still in the home and what is their relationship to parents. Did any of patient's aunts or uncles have any unusual sickness or social experience in which parents were involved.

Especially if parents are immigrants learn about routine life in the old country and parents' reaction to it. Also learn their reaction (and patient's) to immigrating to this country. Learn about change of social and economic status in this country on part of patient's parents.

*b. Parents' Personal History.*—Take up each parent separately unless otherwise indicated. Where another person, *e. g.*, stepmother, is acting as mother treat her like a parent.

Obtain usual statistical information about age, nationality, place of birth, religion, occupation, educational level, marital status, ordinal position of each parent.

Work through each parent's history in terms of health, intellectual status, vocational adjustment; personal, social and sex adjustments.

*Medical.*—Learn about any untoward experience during early developmental period. Such data would include birth trauma, developmental defects, feeding difficulties, early sicknesses. Try to establish whether parent thinks patient is repeating parent's own developmental history in any way.

Obtain a full account of parents' own illnesses with special reference to venereal disease, nervous breakdowns, migraine, endocrinological disturbances, arteriosclerosis, gastric disturbances, accidents and operations. What is parents' mental attitude toward such sicknesses; toward own health in general. What is the other partner's attitude toward wife or husband's health. What is each partner's attitude toward their children's health.

Obtain woman's menstrual history. Keep in mind relationship of her difficulties to menopause.

*Intellectual and Educational Status.*—Was each parent backward or precocious as a child. How well educated are they. How successfully did they compete with other children at school. What is their own estimate of their education, of their intellectual caliber. What does each think about the other in these respects. Does either feel inferior or superior in any way.

*Vocational Adjustment.*—When did each parent first start work. What were their reasons for working. Why has the woman had to work since marriage. How long have they held different jobs. What is their earning capacity. What were the parent's reasons for leaving their jobs. What is their employers' estimate of their work. What is their own estimate of it. How well did they get along with fellow employees. What is the parents' present attitude toward their work. Have they had any other special vocational training which is not being used.

*Personal and Social Adjustments.*—As children were parents energetic and active. Did they play usual games. Did they belong to clubs. Did they have many friends. Were they leaders or followers. Were they restless and irritable. Were they ill tempered. Were they enthusiastic, cheerful or worrisome. Were they indolent, careless, suggestible. Were they quarrelsome. Did they submit to authority. Were they conceited, impatient, aggressive. Did they have any special fears. Were they timid and apprehensive. Were they dependent on adults; siblings, parents. Did they have any special interests, hobbies or capacities. (Keep in mind such things as mechanical skill, athletics, art, music, reading, etc.) Did parents ever demonstrate behavior for which child is being referred. Is there any history of childhood delinquency; truancy, stealing, waywardness, gang activity, early sexual irregularities. What are parents' present attitudes toward their own childhood deviations.

What are parents' *adult* interests, activities and recreational outlets; sports, athletics, clubs, art, music, theater, friends, family, politics etc. Have parents any special hobby, recreational skill or spare time activity.

Have parents few or many friends. What is their attitude toward them. Do they mix easily. Are they interested in people. Are they cynical and suspicious of people. Do they visit much. Is their home social. Do they think "the world is all right." Are they shy with outsiders. Are they selfish, or kind. Are they tactless or stubborn. Are they sensitive. Do they hold grudges. Are they appreciative. Submissive or leaders. Honest or deceitful. In what are they energetic. Are they aimless and restless. Are they persistent and persevering. Are they under tension. Are they erratic in their activity. Are they garrulous. Are they impulsive or deliberate. Are they too outspoken. Are they overscrupulous. Are they cheerful or pessimistic. Are they even tempered. Are they irritable or placid. Do they brood. Are they over enthusiastic. Do their moods change easily. Are they sullen, grumbling. Do they bear grudges. How do they react to disappointments, to good news. Do they crave sympathy.

Have parents any bad habits: excessive smoking, drinking, drugs of other kinds, unusual appetites. Have parents been subject to other poisons: lead, arsenic, gas. Are parents regular in matters of eating, sleeping, elimination, recreation. Do parents think any of their children have any of their own personality traits. What is the parents' explanation for such resemblance.

*Marital and Sex Adjustments.*—Trace the course of parents own interrelationship; circumstances of meeting, courtship, circumstances of marriage, separations, infidelities and present status. In connection with present marital status learn on what things parents come together; on what things they disagree. What are the "inferiorities" and "superiorities" of each. What personality differences or agreement play a part in their relationship. How do the children fit into the dynamics of their personalities. Do financial and vocational differences enter into the disharmony of their relationship. Do recreational outlets, health or habits bring them together or keep them apart.

What is the history of their sex life before and since marriage. Is there any question of impotence, frigidity, promiscuity, free love. Does either partner make excessive demands. Is either partner unresponsive. Is there any question of perverseness, brutality, suspiciousness. Is either partner prudish, overconventional, intolerant or moralistic about sex matters.

#### VI. HISTORY OF SIBLINGS OF PATIENT.

(Treat each sibling separately.)

Obtain usual statistical information *re* age, sex, place of birth, legitimacy, educational and vocational status of siblings. Include children now dead, miscarriages, etc.

How does sibling differ from problem child in personality, intelligence, education, health, strength, choice of companions, interests and activities. (Get specific examples of these differences.) What is sibling's present status with respect to behavior, responsibility, dependence, health. What is sibling's relationship to each parent. What are parents' relationships to each sibling. Is there any demonstrated evidence of this relationship; favoritism, emotional tension. What reasons do parents give for any difference in relationship; *e. g.*, age, health, child's own emotional make-up, stepchild, previous deaths, illegitimacy, prematurity.

What is sibling's attitude toward patient. Did sibling know about patient's presence during gestation period. What was his reaction to it; to the birth of patient. How did sibling act toward patient subsequently. What was patient's attitude toward birth of sibling. Look for signs of jealousy, dependence, companionship, protection, respect, between patient and sibling. Learn how they played together, worked together, slept together. Learn how they react when parents differentiate between them. How do they react to other's absence, sickness, success, failure. Did patient's personality change after birth of sibling.

#### VII. PARENT'S METHODS OF DISCIPLINE.

What is each parent's ideas as to the way children should be brought up. How tenaciously are these ideas held and consistently carried out. What disciplinary measures are actually carried out; deprivation, threats, cajolery, etc. When parents disagree regarding discipline what happens? What does each parent do about handling patient's problem. What do they think should be done. What is origin of parent's ideas on child training; *e. g.*, home (or by contrast), reading, own emotions, antagonism toward other parent, influence of relatives, neighbors, definite professional instruction, individuality. What discipline is attempted by others: by relative, nurse, boarder. What difference is there in results. Do parents change methods of discipline for different siblings.



## VIII. GENERAL BACKGROUND.

*a. Neighborhood.*—Pay attention to sociological factors in neighborhood; variety of races, group traditions, respect for order, gang activity, social standards, permanence of residence.

What is physical make-up of neighborhood with special reference to social and economic status, physical hygiene, opportunities for recreation, undesirable influences (speakeasies, movie houses), local nuisances, crowdedness.

*b. Home.*—Pay special attention to sleeping conditions and arrangements, opportunities and equipment for play, orderliness and cleanliness, social level, understanding of physical needs of children and violation of health precepts, housekeeping standards, regularity of meals, roomers, etc.

What is the emotional nature of the home atmosphere. Who is dominant person in home. What techniques are used to maintain dominance; reactions to this dominance by those in inferior rôle. What tensions are in the home—gross and subtle. What are the apparent causes of stress; the underlying causes. What is problem child's status in home with respect to such tensions. What evidence do you obtain that problem child's behavior is related to home factors. Compare child's status in home with status outside home, *e. g.*, in the group. How are other people in the home complicating home relationships; relative, boarder, servant. Estimate the amount of intelligence displayed in handling home situations and by whom. Describe any other solidarities, harmonies, jealousies, bickerings, rivalries, alignments you can discover. Relate them to the children where possible. Can you discover the causes of these interrelationships. How constant or frequent is the atmosphere you describe. What appears to precipitate or relieve it. What is family's relationship to neighborhood. Do they accept the general group standards.

## IX. INFORMATION RE INFORMANT.

Enumerate all sources of information, the intelligence of informants and their relationship to problem. Estimate their reliability and insight into patient's problem. Estimate the amount of coöperation likely to be obtained from each one and the best means of approaching them. In what ways are they likely to be coöperative in treatment.

## X. SUMMARY.

*a.* Enumerate categorically what outstanding findings this history has brought out.

*b.* Outline your ideas as to the motivation of patient's difficulties.

*c.* What are your treatment recommendations.

## OUTLINE FOR PSYCHIATRIC EXAMINATION OF CHILD.

(INITIAL INTERVIEW.)

(This outline is only a rough unfinished guide to be used for stirring up and recording material only.)

## A. Aim of initial interview:

1. Establish contact with patient, and initiate psychotherapy.
2. Learn motivation for behavior.
3. Survey personality and range of activities.
4. Establish child's deviation from group norm.
5. Outline plans for treatment.

## B. Methods of obtaining information:

1. Observation of child's spontaneous behavior and in reaction to questions.
2. Estimation of answers to direct questions.
3. Evaluation of spontaneous remarks.
4. Following all leads child gives by his remarks.
5. Following leads already obtained from careful reading of social history.

## C. Synopsis of outline.

1. Observation of child's behavior:
  - a. Appearance.
  - b. Relationship established with examiner.
  - c. Nature and direction of child's physical and mental drive.
  - d. Emotional make-up.
2. Data on specific problems.
3. Background and child's reaction to it:
  - a. Recreation.
  - b. Friendships.
  - c. Family.
  - d. School.
4. Thought life:
  - a. Type of thinking.
  - b. Phantasies and day-dreams.
  - c. Wishes and ambitions.
  - d. Night dreams.
  - e. Earliest memories.
  - f. Worries, fears, etc.
  - g. Identifications.
  - h. Vocational plans.
  - i. Reaction to own body and sexualizations.
  - j. Child's solution for difficulties.
5. Summary of findings.
6. Outlook for future.

7. Treatment:
  - a. Medical.
  - b. Psychiatric.
  - c. Educational.
  - d. Recreational.
  - e. Vocational.
  - f. Social.

#### I. OBSERVATION OF CHILD'S BEHAVIOR.

(Always give specific examples of behavior or language used where possible.)

*a. Appearance.*—Pay special attention to way child is dressed. Are clothes older or younger than his years. Does he look as though his parent had dressed him. Is there any special eccentricity. Has he any special badges or pins. Is he untidy. Is he overneat. Is his appearance swagger. Is he unkempt. Is he afraid to get himself dirty. Is he proud of any aspect of his appearance. Does he try to hide some aspect of his make-up. Look for noticeable physical defects and signs of bad habits such as nail biting, thumb sucking, etc. Also observe constitutional irregularities. (Combine with 4i.)

*b. Relationship Established with Examiners.*—Is contact difficult, over-easy. Does child respond to everybody, to nobody, to male, to female. Does contact change during interview, at what point. What is relationship at end of interview. Is contact immediate, slow, shifting. Does contact change with varying nature of material discussed. Does child treat examiner as equal, superior. Is child cowed, oversolicitous, bumptious, friendly, cooperative, oversure.

(Evidence as to contact is obtained by noticing such things as way child enters and leaves room, sits down, addresses examiner, speaks up, modulates voice, handles cap, looks at examiner, looks around during interview, responds to different questions, and the remarks spontaneously made, facial expressions, etc.)

*c. Nature and Direction of Child's Physical and Mental Drive.*—Is child all over the place, restless, overactive. Are interests very changeable. Is child blocked, repressed, inhibited, lethargic, spontaneous, shifting, rigid or stiff, uneasy. Is energy well taken care of. Is child slowed up. Does child tire during interview, at what point.

(Evidence for amount and nature of drive is seen in child's behavior in room, manner of answering questions, urging required, postural changes, facial expressions, reactions to requests, interests in objects in room, spontaneous requests and actions, etc. (Compare with information on 3a.)

*d. Emotional Make-Up.*—Observe evidence of tears, laughter, catch in voice, change in voice pitch, changeability of mood.

(Try to connect with specific social or personal material.)

Is child shy, sullen, stubborn, lacking in self-control, excitable, irritable, immature, oversensitive, depressed.

Ask: When are you happy, unhappy, when do you get angry, etc.

(Use child's reaction to questions and nature of past experience as obtained from his productions for evidence of emotional make-up as well as child's definite emotional disturbances during interview.)

## II. DATA ON SPECIFIC PROBLEMS.

Try to get child's own story on specific difficulties. Try to get child to trace their development from their genesis to their present status. Try to get from child's story some idea of their motivation and influences which attenuate or exaggerate them. Try to learn influence other children have on child's problem conduct.

(This plan is much easier for social and sexual difficulties than for personality and emotional difficulties. This account should be in child's own language as much as possible. Avoid suggestive and leading questions when child is producing adequate material. Avoid interpreting child's story at this point until all material is in. Try to obtain as many details of child's story as possible. Observe closely child's reactions as story is being told. Evaluate reliability of story. Where necessary, use leads obtained from social history to obtain more material from child.)

## III. CHILD'S BACKGROUND AND HIS REACTIONS TO IT.

*a. Recreation.*—What are child's play interests and activities. What opportunity has he for indulging them. How do child's ability and interest in play compare with standards for group. Is child's play life overdeveloped; underdeveloped.

*b. Friendships.*—(Very important chapter.) What is child's position in groups. Has he friends; own age, older, younger. What is his attitude toward them; superior, inferior. What is their attitude toward him. Is he a leader, follower; why. Does he feel inferior to them in games, in physique, in intellect. Is there any objective reason for this inferiority. What nicknames has boy. How does he react to them. Does he protect himself against playmates' attacks directly or by compensation. Is any lack of friends due to his own personality (infantilism, egocentricity, etc.) or to parental attitude, or to his fixations within family. What are his substitutes for friends. Does he accept the group standards, or does he protest against them; why. Does he differentiate in his behavior toward girls. How. Is he a member of gangs, clubs. What is his status within them. Is he under the influence of other children or another child (*e.g.*, older boy friends who are working). How. (Be sure to follow any leads child gives you in connection with his personal relationships.)

*c. Relationship to Family.*—(Another very important chapter.) Is there evidence of any family fixation. (This evidence is best obtained indirectly. Ask such questions as: Does your mother undress you, feed you, sleep with you, etc.)

Explore relationship to siblings for evidence of jealousy or overattachment. Is any sibling influencing child directly or indirectly. Is there a younger child recently arrived in home. What is patient's attitude toward newcomer. (Relationship in games, attitude toward possessions and accomplishments of siblings, child's interpretation of parents' attitude toward siblings, and child's favorite in family are good leads for such exploration.) Is there an older sibling whom subject is imitating.

Look for evidence of child imitating parents' conduct: *e. g.*, hypochondriasis in parents and escapades of father may be lively topics of home conversation. Find out child's story of parental handling. Learn influence of broken home. Does child feel insecure in home for any reason. Are there other relatives influencing the child—grandmother, aunt. Estimate degree child has evolved beyond family group. Is he patterning himself after either parent. Remember to check up the influence of nurse in well-to-do families. (For younger children a disjointable doll is sometimes used to obtain child's reactions to siblings or other intimates.)

*d. School Adjustment.*—What is child's attitude toward authority. What in general is child's attitude toward school, toward special teachers. Try to establish reasons for likes or dislikes towards teachers. Is the teacher a parent substitute or imago. Is she a primary source of identification. What are his difficult and easy subjects. Is this strength or weakness linked up with parental attitude toward education. Is lack of interest or inattentiveness related to day-dreaming. Try to learn whether child's poor school work is intellectual in origin (*cf.* with intelligence and achievement tests) or is it a secondary problem due to personal conflict or environmental influences. (In question of truancy investigate influence of companions and use made of time away from school.)

Form your own opinion of child's intelligence and ability to learn. Is there any evidence of an attitude of inferiority toward school. Is misbehavior at school compensation for poor school work. What are child's relationships to other children in school. (Combine with 3b, Friendships.) What is child's plan and attitude toward future education. What is child's solution for scholastic difficulties. Try to get child to compare any previous school experience of a more satisfactory nature with present unsatisfactory school adjustments. Do parents interfere with school relationships. How. Do child's brothers and sisters go to the same school. What was their record. Does it interfere with patient. What activities has child at school outside of studies. (Link up with 3a, Recreation.)

#### IV. CHILD'S THOUGHT LIFE.

*a. Type of Thinking.*—From way child answers and produces material, decide whether child's thinking is reflective and clear. Is he confused or hurried. Is material well organized. Is he overproductive, blocked. Are associations loose. Is material meager. Are there memory defects; significant or general gaps. Is child overexact, uncertain, full, concrete, abstract in his productions.

*b. Phantasies and Day-Dreams.*—Proceed both directly and indirectly. Get child to "make believe" with you. Try to discover identification tendency here. Discuss about what he thinks when lying in bed at night, when not interested in class work, when walking along street, etc. Estimate amount and function of phantasies. If productions are inadequate ask child to make up a story for you. If results poor use leads already obtained *re* home and school, visits to movies, reading. Other ways of stimulating phantasy production are letting child imagine he is all powerful, what would he do. If he had a million dollars, what would he do. If he could change anything he desired what would he change. If he didn't have to go to school what would he do. How he sees himself when a man. What are his best thoughts or memories. Decide relationship of phantasies to compensation.

*c. Wishes or Ambitions.*—(Technique is much the same as 4b.)

Proceed directly and indirectly. If child could do anything, what would he do. What does he want to do when he graduates from school. Try to learn origin and influences of these desires. In older children autobiographies are helpful.

Child's drawings, when interpreted, serve a similar function. Ask child his three best wishes.

*d. Night Dreams.*—(Best reserved for older children.) It is safer to use these as illustrations of previously established points. (Proceed cautiously with interpretation—especially in initial interview.) Does child have recurring dream. Does he think it a good or bad dream. Has he any interpretation of dream. What other things does he think about in connection with dream. If child claims he does not dream, have him make up one on the spot. Are dreams well organized, close to the surface, easily recalled, significant, etc.

*e. Earliest Memories.*—What are the earliest experiences child can remember. Are they pleasurable. What is child's reaction to them now. If memories are difficult to recall, help by linking up with some family situation. What does he first remember about mother, father, sibling, etc. What are his memories of deceased parents, earlier environment, first school experiences, first exciting visit, etc.

*f. Worries, Fears, Etc.*—Is he afraid of dark. Does his mother have to accompany him to bathroom, bedroom. Is he afraid of dogs, other animals. Has parent or somebody else he knows similar fears. Is he afraid of any specific person; father, teacher, colored person. What is the source of fear. Is he afraid of being alone, of passing along certain alleys and corners. (Be sure to follow up any lead yielded.) When is he happiest, saddest. When is he having best time, worst time. What things do his parents worry about. Does he worry about them, about school work, about sickness, about his appearance, his ability to play games, etc.

*g. Identifications.*—Discover choice of movie actor, hero, teacher, football or baseball star, older boy. If he could be like anybody, whom would he choose. Why. What is his favorite comic. Has he collected any pictures of heroes. What is basis of choice—group ideal, compensation, identification, substitution. If no hero, is it related to negativism, over self-evaluation.



*h. Vocational Plans.*—Discuss directly with older children. (It is helpful to them and revealing to the examiner.) Try to trace origin of these plans—teacher, parent, older child. Why is child choosing a particular line. Does he seem fitted for it. Is it likely to fit in with his psychiatric needs. Is it an effort to escape from difficulties.

*i. Reaction to Own Body, Including Sexualization.*—Does child have any pains. When does he get them. What helps them. Does anybody he knows have similar pains; parents, siblings. What does he say parents do about his pains. What does he think about them. (Try to establish what function, if any, pains serve.)

Is he as strong as other boys. What can he do or not do that they can do; run as fast, etc. Is he sensitive about any part of his body. What does he or she think of size, weight, muscles, face, mouth, nose, heart, chest, belly, genitals, breasts. (This is a good time to lead up to questions of sex.) Does he think his organs are different from other boys'; smaller, larger. Does he ruminate about birth. How does he think babies are born. What does he think his organs are for. What does he think about when he plays with them. Has he seen other sex organs; parents', girls', boys'. Has he played with other children's genitals. Was he the aggressor or led by others. Would he like to play with anybody that way—mother, father, sister, etc. Is he going to marry when he grows up; whom. What has he been told happens to boys who play with themselves. What is his attitude toward girls; overprotesting, too much indifference, etc. What is girl's attitude toward menstruation. Does child peep or write obscenities. Has it sex phantasies. If any frank leads obtained, follow through to obtain source of information or practice and its significance to child.

*j. Child's Solution for Own Problems and Attitude Toward Them.*—Try to find out what child would like to do if he could do anything he wished about his problems. (This may reveal more of child's personality and point to some stress in his environment not necessarily previously discovered.) What does he think should be done about them. What would he like you to do. Whom does he hold responsible. Does he feel guilty, act ashamed. Does he show a spirit of bravado about them. Does he cover up his feelings. Will he cooperate in treatment. Is he a good risk. How does he react to suggestions you make as to what should be done. How is he affected by visit to clinic.

#### V. SUMMARIZE YOUR FINDINGS AND IMPRESSIONS OF CHILD.

Give evidence from material obtained for your points of view. Try to relate each finding to the complete picture so as to present a well rounded out understanding of child's behavior.

#### VI. OUTLINE YOUR IDEA AS TO WHAT YOU THINK IS LIKELY OUTCOME OF THE CASE.

Base this upon past history, nature of behavior, your findings, results of previous treatment and present or possible environment.

## VII. DISCUSS TREATMENT IN TERMS OF YOUR SUMMARY.

Enumerate treatment proposals under following headings where necessary:

*a. Medical.*—This will include diet, drugs, rest, exercise, further examinations. It will also include treatment of other members of family where necessary.

*b. Psychiatric.*—Outline type of therapy recommended, and for whom.

*c. Educational.*—This will include recommendations for change of grade or of school, special tutoring, special curricula. It will also include recommendations for educational tests.

*d. Recreational.*—This takes in type of play life needed, kind of toys, friends and group activity.

*e. Vocational.*—Outline what type of work is indicated for child. This might include "after school" employment where indicated.

*f. Social.*—Recommendations as to parents, home, teacher, siblings, from the viewpoint of methods of handling child come in here. Also recommendations with regard to change of neighborhood, home, etc.

## PROLONGED NARCOSIS AS THERAPY IN THE PSYCHOSES.\*

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### INTRODUCTION.

American psychiatry has, in the past three years, manifested a renewed interest in prolonged deep narcosis as a therapeutic procedure in the psychoses. Some startling recoveries, of both permanent and temporary nature, have been reported in certain cases hitherto regarded as hopeless institutional types.

Interpretation of the pronounced behavior changes, standardization of technique, choice of the drug to be employed and notations as to the types most responsive to this form of treatment are some of the significant data unobtainable from American psychiatric literature. It was with a view to studying the problem from these significant angles that we began this investigation in January, 1930.

It would seem wise to define what we mean by "narcosis" therapy. Its exact definition and the connotation implied by its use in this contribution is: the production by a hypnotic drug of prolonged deep unconsciousness which approaches as near as possible normal profound sleep. We do not wish to enter into the pharmacologic controversy regarding the subject nor to propose Claude Bernard's theory of "semi-coagulation of the nerve cell" as the mechanism behind the clinical picture of narcosis.

### LITERATURE.

European writers seem to imply that Klaesi,<sup>1</sup> whose reports appeared in 1920, should be credited with the introduction of the narcosis method of treatment in mental disorders. However, the technique had been at that time in use for half a century. Ether, chloroform, alcohol, opium and its derivatives were employed as

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long ago as 1870 to produce prolonged periods of unconsciousness in attempts to break up psychotic mechanisms. Greisinger<sup>2</sup> in 1882 described several complete cures and many partial recoveries from psychotic states following narcotization by means of these substances. Since the latter part of the preceding century no less than 40 drugs have been employed for the purpose of precipitating psychotic patients into profound stupor in an effort to bring about amelioration of symptoms. Rigg<sup>3</sup> and McLeod<sup>4</sup> in 1900 introduced a "new departure" in the treatment of mental disease by the use of massive doses of bromides. They aimed at the production of stupor lasting for variable periods of time in cases of acute mania. Wolff,<sup>5</sup> employing intravenous trional, experimented with a small series of cases in 1901. The treatment was not standardized and the results not particularly encouraging. The first series of cases of any great significance was reported by Klaesi.<sup>1</sup> Somnifene was administered intravenously and intramuscularly to 24 schizophrenics and a lethargic state closely approximating the somnolence of encephalitis was obtained. The author states that during the active stage of the treatment, approximately 10 days in most cases, many negativistic patients who required forced feedings lost their resistances and began to eat voluntarily. Others, he said, exhibited a great push to reveal their conflicts. The stage of induction, he believes, offers a golden opportunity for psychotherapy. Moser<sup>6</sup> followed Klaesi's technique in the treatment of 26 schizophrenics, but obtained no recoveries. He seemed to regard psychotherapy as useless, and attributed any benefit the patient might derive to sleep and relaxation. He believes the method is indicated simply to procure prolonged periods of rest in agitated and insomniac patients.

The most comprehensive study appearing in the literature is that contributed by Oberholzer,<sup>7</sup> who treated 92 cases at the Zurich clinic between 1922 and 1925. He dealt with a wide variety of psychotic reactions in all states of regression. Somnifene, luminal, and sodium luminal were given intravenously. A number of patients received more than one period of narcosis so that a total of 186 stuporous phases were induced. It will be seen in Chart I that Oberholzer's greatest success was with the manic types and that the cases already advanced in regression showed no change. Lutz<sup>8</sup> treated 82 schizophrenics of the types designated as "favorable"

by Klaesi.<sup>1</sup> He employed dial and luminal intravenously, finding the former more efficient and that both of these substances were less toxic than somnifene. He found it necessary to use occasional doses of hyoscine to fortify the other hypnotics. Rectal administration was found to be of greatest efficacy. The state of narcosis was maintained for 9 to 24 hours a day for a period of about 11 days. He stressed the importance of selecting cases carefully from the standpoints of severity of the psychosis, bodily resistance, personal reaction toward the physician, and attitude of the patient toward the therapeutic procedure. His results are encouraging but as in all of the reports from the Zurich school, we are met with the difficulty of evaluating results in our statistical comparison because of the variance of their diagnostic criteria.

Somnifene has been the drug employed with greatest frequency by European investigators and results of its use in the psychoses have been reported by Weyler,<sup>2</sup> Sacristan,<sup>3</sup> Stuurmann,<sup>4</sup> Furrer,<sup>5</sup> all more or less following the technique established by Klaesi.<sup>1</sup> Muller<sup>12</sup> employed liquid dial intravenously in producing narcosis for 9- to 10-day periods. Manic-depressives, manic types, manic schizoids, and agitated catatonics were treated intensively and as will be seen by the accompanying chart, his most satisfactory results were obtained in manic reactions. Sioli,<sup>14</sup> Muller,<sup>15</sup> and Maier<sup>16</sup> used luminal and its sodium salt intravenously in several series of cases with somewhat less satisfactory results. Avertin, chloral, pantopon, dionin, and adalin have all been used by numerous investigators on the continent among whom Wiethold,<sup>17</sup> Schlafgen,<sup>18</sup> Berkley-Bell,<sup>19</sup> and Enke<sup>20</sup> have published valuable contributions.

In this country interest in chemotherapy in the psychoses seems to have been freshly aroused by the experimentation of Loevenhart, Lorenz, and others<sup>20</sup> with schizophrenic subjects. Catatonics and general paretics were used in their investigations of the respiratory responses to sodium cyanide administered intravenously. During the course of the investigation a change in behavior was noted among the catatonic subjects; they became animated and made a few relevant replies. Carbon dioxide replaced sodium cyanide as a respiratory stimulant and better results were obtained. Lorenz<sup>21</sup> and Bleckwenn<sup>22</sup> made use of these observations in further studies of the responses of schizophrenic patients to prolonged narcosis. Their observations have reopened this field of investigation in this

CHART I.  
STATISTICAL COMPARISON.

	No. of cases.	Able to be discharged. Recovered.	Maintained state of definite imp. Permanent improvement.	1-14 days. Temporary improvement.	Neither better nor worse. Unchanged.	
<i>Oberholzer.</i>						
Manic .....	15	7	2	0	4	
Depressed .....	8	0	0	2	2	
"Acute schizoid" .....	20	1	2	5	9	
"Somewhat demented schizoids" .....	10	1	1	3	3	
Catatonic .....	15	3	3	3	5	
"Chronic agitated cases" ....	19	0	2	6	10	
Paranoid .....	5	0	2	0	2	
Total .....	92	12	12	19	35	
		Well for a few days; maintained imp. sufficient for transfer to quieter wards. Permanent improvement.	One to ten days of improvement. Temporary improvement.	Neither better nor worse. Unchanged.	Died.	
<i>Lutz</i> Total.	"Cured." Recov.					
Schizophrenics (undifferentiated) ..	82	9	32	25	15	2
				"Some improvement." Improved.	Neither better nor worse. Unchanged.	Died.
<i>Moser</i> Total.						
Schizophrenics (undifferentiated) ....	26		12	11		3
<i>Bleckwenn</i> Total.		Recovered.	Unchanged.			
Manic .....	3	2	1			
Catatonic excitement .....	1	1	..			
Catatonic (stuporous phase).....	2	0	2			
Agitated depression .....	1	1	0			



country in the treatment of psychotic patients. Bleckwenn,<sup>22</sup> in three recently published reports, sounds a note of optimism in the treatment of neuropsychiatric conditions by the use of sodium amytal narcosis. His material is not readily summarized for statistical comparison but the results obtained show striking improvement in catatonic, manic-depressive, and psychoneurotic patients. There was no attempt to maintain prolonged deep narcosis but he stated that the efficacy of the treatment rested on the 12 to 18 hours of profound sleep induced by the drug.

Few theories as to the mechanism bringing about the amelioration of psychotic symptoms have been brought forward. The theory of cellular rest and the opportunity afforded the cellular metabolism to store up reserve for subsequent expenditure seems acceptable, but obviously merely touches upon the primary aspects of the matter. Muller<sup>23</sup> is vague in stating that the beneficial effect "is dependent upon central anesthesia with an interruption of the vicious circle of affective agitation and motor agitation." He concludes that an increase of the affective agitation results from the injected internal irritant. His final statement is that "sleep and the interruption of diseased functions by means of tissue rest" is the chief therapeutic effect. Klaesi<sup>1</sup> makes a comparison between the healing of inflammations by application of local anesthesia and the soothing action of the hypnotic sleep on the disturbed brain of the psychotic. This writer's psychodynamic point of view seems more acceptable. He believes that anything that will prostrate the patient, lower his general resistance, and make him dependent upon others will make him more accessible to psychotherapeutic endeavors. He finds the same effect following the production of debilitating fevers by the use of tuberculin. Further, it is observed by Klaesi that the patient so treated often has a feeling of gratitude and confidence toward the physician and thereby the gateway to success by psychotherapy is opened.

Loevenhart<sup>24</sup> and his co-workers sought to explain clinical improvement on a basis of improved cellular oxidation and cortical stimulation. Lorenz<sup>25</sup> believed that sodium amytal caused vascular dilation and increased oxidation of cerebral tissues. The latter, however, abandoned this conception and stated that deep narcosis apparently inhibited or dislodged mental mechanisms responsible

for stupor or catatonia. Bleuler<sup>23</sup> gives us a clue to the dynamics behind certain recoveries among catatonic schizophrenics subjected to this form of treatment. He feels that the schizophrenic, with part of his personality at least, craves help and is dependent upon others for it; the narcosis causes a breaking through of the schizophrenic's defense and gives him a chance for contact with his environment.

Bancroft and his co-workers<sup>24</sup> have formulated an ingenious hypothesis in which not only the mechanism of improvement following administration of a hypnotic drug (sodium amytal) is explained, but the whole genesis of psychic disorders is reduced to the simple terms of colloid over-agglomeration and over-dispersion. The catatonic and hebephrenic schizophrenics and involutional melancholia are, they postulate, suffering from an over-dispersion of cell colloids, while manic-depressives, general paretics, and paranoid schizophrenics suffer from an over-agglomeration (coagulation) of cell colloids.

They arrive at this biochemical formulation through studies among psychotic patients, employing sodium amytal which is regarded as a coagulating agent and sodium thiocyanate (rhodanate) which is referred to as a dispersing agent. They claim to demonstrate that sodium rhodanate induces dispersion of the over-agglomerated cell colloids of manic-depressive patients and results in clinical improvement or recovery. Conversely, the administration to manic-depressives of an agglomerating or coagulating drug such as sodium amytal produces coagulation of an already over-agglomerated state, thereby giving rise to an exaggerated clinical picture. They demonstrate that sodium amytal induces clinical improvement in schizophrenics of the catatonic and hebephrenic type and explain the results on a basis of coagulation, approximating the normal degree of equilibrium, of cell colloids in an over-dispersed state. Conversely, also, sodium rhodanate produces exaggeration of the clinical symptoms—the mechanism being a still further dispersion of an already over-dispersed state of cell colloids. Lang and Patterson<sup>25</sup> were able to add a considerable number of clinical proofs of the scientific accuracy of this hypothesis. They state that 83 per cent of cases gave positive results with the use of both drugs (that is, better with one and worse with the other) and 93 per cent positive results with one drug. They suggest this technique as a

psychiatric differential diagnostic test. After a study of 46 cases, Lang and Patterson reached the conclusion "that the functional psychoses show correlation between the syndromes presented and the state of dispersion of cell colloids."

#### TECHNIQUE.

The technique which we now employ is the result of experimentation with various methods and several hypnotic drugs over a period of two years. In the original series of cases done in January, 1930, the technique of Bleckwenn was followed. Sodium amytal was administered intravenously with the aim of producing 2 to 20 hours of deep sleep daily for a period varying in length from 6 to 10 days. A tolerance to the drug became apparent. Sodium amytal was replaced by luminal and sodium luminal. A course of hyperpyrexia and chills induced by intravenous doses of typhoid vaccine was added. The fevers of  $103^{\circ}$  to  $107^{\circ}$  were produced daily for five to seven days. Sufficient luminal was given during this time to insure adequate rest. The luminal and sodium luminal were given intravenously and by mouth in one and a half to six grain doses to induce deep narcosis for 7 to 10 days. Tolerance again became apparent and it was necessary to increase the dosage of the hypnotics and to fortify these with occasional doses of hyoscine in 150th to 100th grain doses given hypodermically. It was found that 12 to 18 grains of luminal were necessary to produce continuous stupor for periods of 20 to 24 hours. Toxic manifestations became evident in a number of patients so treated and the method was abandoned. The whole technique was discontinued because of the emaciation and prostration which seemed to extend beyond justifiable limits. Sodium amytal narcosis was re-instituted and the treatment is now standardized as follows:

The aim is to keep the patient in a state of profound sleep for a continuous period of 7 to 10 days with the exception of two half-hour intervals daily for the purpose of attending to nutritional needs and evacuations. The patients are isolated in secluded, quiet rooms with windows darkened. Before the end of the narcosis the patients are transferred to bright, cheerful rooms among quiet, convalescent patients. One intravenous dose of 15 grains of sodium amytal in 5 per cent is given at 9 a. m. daily. Two oral doses of

9 to 15 grains are given at 3 p. m. and 9 p. m. Sufficient additional hypnotic is administered to produce a constant level of deep narcosis. The rate of intravenous injection is not to exceed 1 cc. per minute. This can only be accomplished by the use of a stop watch, for regulation of the rate of flow. Blood pressure and pulse rate are recorded before intravenous injection, at 5-minute intervals for the first 15 minutes after the injection, then a single reading is made a half-hour later. The patients are spoon fed twice daily when possible, and tube feeding is resorted to only when stupor is so profound that attempting to swallow might endanger the patient's welfare. At the time of feeding, bowels and bladder are evacuated but the patient is not to be awakened at any other time for these functions. An S. S. enema is given every second day during the stuporous phase of the treatment. Fluid intake and output are charted. The fluid intake is maintained at 3000 cc. and the total caloric value of the feedings is approximately 3000 in 24 hours. Daily urinalysis is done whenever possible. The most constant danger during the actual stuporous stage is strangulation from swallowing the tongue. The patient is to be kept lying on the side and not on the back. Vomiting with aspiration of foreign material is a less common danger but should be guarded against.

The criteria for classification as "recovered," "improved," etc., were more or less sharply defined since no helpful summary of results could be made without an accurate statement as to the degree of improvement implied by the various terms.

*Recovery*, discharge from the institution and continuing, at the time of writing, to maintain a social status considered normal. Ten patients made and maintained this degree of recovery. A number have returned to their former occupations.

*Permanent improvement*, the ability to reach and maintain a higher level of social adjustment from time of treatment to date of submitting this article for publication (10 months to 2 years); or advancement from acute to convalescent wards or to the home under a somewhat modified environmental status.

*Temporary improvement*, recovery or clinical improvement of relatively short duration (10 to 90 days). It also implies subsequent regression ultimately reaching a level approximately equal to the condition before treatment. No patient, however, regressed below the level which was manifest at the institution of treatment.

Several patients recovered within three to six months after apparent regression to the level existing prior to treatment but the recovery, we feel, should in these cases not be credited directly to the therapeutic procedure.

CHART II.

Penna. Hosp. Cases:	Recovered.	Perma- nently im- proved.	Tempo- rarily im- proved.	Unchanged.	Total.
Manic-depressive .....	6	2	1	3	12
Schizophrenia .....	2	1	5	1	9
Mixed or unclassified manic- schizoids .....	1	1	1	1	4
Psychoneurosis .....	1	0	0	0	1
Totals .....	10	4	7	5	26

CHART III.

	Recovered.	Perma- nently im- proved.	Tempo- rarily im- proved.	Unchanged.	Total.
Manic-depressive:					
Manic .....	5	0	0	0	12
Depressed .....	1	2	0	1	
Agitated depression .....	..	..	1	2	
Schizophrenia:					
Catatonic .....	1	1	3	..	9
Paranoids .....	..	..	1	..	
Hebephrenic .....	0	0	1	1	
Simple .....	1	..	..	..	
Unclassified:					
Manic-schizoids .....	1	1	1	1	4
Hysteria .....	1	0	0	0	1
					26

*Unimproved* or *Unchanged*, designate those patients in whom no change for better or for worse was apparent as a result of the treatment. In this group, too, we included one or two patients who were ultimately discharged recovered but whose recovery apparently was not directly dependent on the treatment.

## DISCUSSION.

No thoroughly satisfactory interpretation of the results obtained by subjecting psychotics to prolonged narcosis has been brought

forward in the literature. The coagulation-dispersion theory of Bancroft does not seem to offer itself readily to correlation with the profound changes in behavior which are brought about by the period of chemically induced stupor. Not only is this theory difficult to accept from the psychiatric point of view but pharmacological researches by Henderson and Lucas<sup>28</sup> fail to sustain the cardinal points in Bancroft's scheme. The structure of Bancroft's theory rests upon a specific antagonism between sodium amytal and sodium thiocyanate. Henderson and Lucas cannot accept this and state "Bancroft has not been able to demonstrate that coagulation (as the term is usually understood) always accompanies narcosis."

## CHART IV.

RESULTS IN RELATION TO THE VARIOUS METHODS EMPLOYED.

	Luminal and sodium luminal administered orally and intra- venously, fortified by hyoscine by hypo., plus hyper- pyrexia and chills induced by intravenous injections of typhoid bacilli.	Sodium amytal administered intravenously and orally.	Two or more attempts utilizing both the "luminal- hyoscine- typhoid" method and sodium amytal narcosis.
Recovered .....	6	3	1
Permanent improvement ....	1	2	1
Temporary improvement ....	1	3	3
Unchanged .....	0	4	1
	—	—	—
Total .....	8	12	6

They reject the coagulation theory of narcosis even as the term is used by Bancroft.

We must look elsewhere for an explanation of the phenomena. As indicated earlier in this contribution Bleuler<sup>29</sup> gives us a very acceptable explanation of the dynamics of recovery. He indicates that the purpose is to prevent the schizophrenic peculiarities from becoming fixed and to give the patient the chance and the motive for a new and better adaptation. The narcosis produces dependence upon environment and brings the patient at once into contact with others.

It will be noted in Chart IV that the highest recovery rate occurred among those patients subjected to the most heroic method of treatment, namely luminal or sodium luminal administered intravenously and orally and fortified by hyoscine, plus hyperpyrexia



and chills induced by intravenous typhoid vaccine. In other words, that form of treatment which was most debilitating and produced the greatest degree of toxemia and physical prostration resulted in the largest number of recoveries. In addition to a possible chemical interpretation this result has a very definite psychological significance. It would seem that the degree of forced dependence upon the environment is directly related to the prognosis. The amount of activity of the physicians and the nursing staff and their constant presence in the picture, both during active treatment and the convalescent phase, appear to be important factors in the recovery. The degree of energetic interference with the psychosis may determine the rate of recovery. The two cases of schizophrenia which resulted in recovery were treated by this technique. Both of these patients were profoundly prostrated physically and showed signs of toxemia evidenced by "barbital rash," albuminuria, vomiting, nystagmus, and delirium.

One of the greatest obstacles to the use of psychotherapy in schizophrenics is the defense which in the phase of narcosis is more or less completely broken through. A transference relationship is forced and serves as an avenue for the psychotherapeutic approach.

Verbatim records of the productions of patients who have been subjected to this form of treatment have been of great value in understanding the dynamics of their psychoses. The apparent relaxation of the censorship produced by the drug allowed a free flow of significant material which later could be utilized for efforts at reintegration in the convalescent phase. We have been able to obtain from otherwise mute catatonics, history of significant precipitating factors which could be understood and correctly evaluated. Jelliffe<sup>27</sup> applied the term "drug analytic method" to this most helpful portion of the therapeutic scheme. He regards the technique as a valuable extension of our capacities for getting at and understanding repressed unconscious material.

The stupor can be looked upon as an enforced or induced regression to the stuporous (or ante natal) level. This deep regression furnishes the patient with the goal of his regressive yearnings. Once the avenue is opened, re-living in a friendly and protective environment can be promoted through successive phases of development and objects more in keeping with the demands of reality can be substituted.

## SUMMARY.

We have had an opportunity to observe the patients treated by this method for periods varying from 2 years to 10 months. The majority of treatments were given two years ago so that the results obtained may be said to have been subjected to a reasonable test of time.

Toxic effects evidenced by the "barbital rash," vomiting, fever, etc., were frequently noted during the administration of luminal and sodium luminal. These reactions together with marked hyperpyrexia and chills induced by intravenous injections of typhoid vaccine seemed to result in an unjustifiable degree of prostration and in several instances appeared to jeopardize the physical welfare of the patient. No deaths occurred during the treatment of this series of patients though fatalities are not infrequent in the reports of European investigators, who have employed this method of therapy.

Sodium amytal has not, in our experience, produced any toxic effects even though doses of 40 to 60 grains in 24 hours have been average and 90 to 120 grains not uncommon. Repeated checks on kidney function during the treatment have rarely shown the presence of albuminuria. Kidney function tests taken after as compared to before the sodium amytal narcosis fail to reveal any interference in rate of secretion.

Used in the doses mentioned sodium amytal has never failed to produce the desired degree of narcosis. From time to time tolerance to the drug seemed to develop but has never been of enough significance to interfere with the treatment. The rate of injection for intravenous administration should not exceed 1 cc. per minute and we have found it advisable to regulate the rate of injection by stop watch. A fall of systolic blood pressure of from 10 to 40 mm. of mercury is almost constant. If the rate of injection is hastened the fall of blood pressure is correspondingly greater and more precipitate. A 10 per cent solution was first employed but caused sclerosis of smaller veins with the formation of thrombi. A 5 per cent solution is now used and no outward effects have been noted. When administered intramuscularly, rectally, or orally the results have been almost as satisfactory as by intravenous technique, though considerably slower.

None of the barbitals used thus far have been in any way habit-forming and no withdrawal symptoms have been noted.

Calculation of dosage according to body weight would seem more accurate but is not practicable since the requirements of patients seem to vary with the type of psychotic reaction and not with weight, age, sex, nor the degree of agitation.

A nurse at the bedside to record, verbatim, the productions of the patient during the phases of induction and emergence from the stupor is a valuable help in detecting the significant factors in the structure of the psychosis.

In ambulatory patients, private and clinic practice it has been possible by means of small doses of sodium amytal to assist uncommunicative patients to reveal their conflicts. Also, in many cases the drug seems to act as an agent facilitating the release of dreams which furnish an abundance of material on which to base conclusions as to the dynamics of the illness as well as psychotherapeutic procedures.

#### CONCLUSIONS.

Our experience with the various drugs of the barbitol group leads us to assert that sodium amytal is relatively non-toxic and offers a wide margin of safety.

So far in our investigation no patient subjected to the narcosis treatment has been made worse, while 80.8 per cent have been improved or have recovered. Ten patients (38.5 per cent) recovered completely, eleven (42.3 per cent) were definitely improved and only five (19.2 per cent) remained unchanged. All (5) cases of acute mania made recoveries.

Our results indicate that the greatest success with this form of treatment can be anticipated in the manic-depressive group. This is directly opposed to the findings of several investigators<sup>24, 25</sup> who regard sodium amytal as a specific therapeutic agent in schizophrenia and a drug distinctly contra-indicated in manic-depressive psychosis.

Prolonged narcosis as a therapeutic procedure in psychiatry should be carefully evaluated by systematic trial in large series of cases of all types.

The mechanism of recovery or improvement seems to be psychological rather than biochemical. A psychodynamic formulation seems not only more reasonable and more tenable but is readily correlated with and supported by well founded psychological and psychiatric observations.

## APPENDIX SHOWING DETAILS OF CASES STUDIED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
1	14625	33	M	Irish-American. Maladjusted through grade school. Sensitive, shy, had speech defect. Onset of psychosis four years prior to treatment.	Schizophrenia, paranoid type.	(1) Luminal fortified with hyoscine by hypodermic plus hyperpyrexia by typhoid vaccine. Period of narcosis 15 days. (2) Sodium amytal by intravenous and oral route. Duration seven days.	Improved after period of 17 days. Remained to convalescent ward. Regressed after 7 months to previous level.	Classified temporary improvement.
2	10250	27	F	American. Unfavorable hereditary and environmental factors. Early evidence of maladjustment. Was sensitive, silly and seclusive. Onset of psychosis five years prior to treatment.	Schizophrenia, catatonic type.	(1) Sodium amytal by intravenous and oral technique. Duration of stupor seven days. (2) Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 11 days. (3) Sodium amytal intravenous and oral.	(1) Marked improvement for 10 days. Rapid regression to catatonia. (2) No improvement. (3) Slight improvement for six weeks.	Classified temporary improvement.
3	14626	27	M	Strongly tainted heredity. Cyclothymic personality type. Depression followed acute gonorrhea. Duration two months.	Manic-depressive (benign stupor).	(1) Luminal by intravenous and oral administration plus hyperpyrexia. Duration of narcosis 10 days. (2) Sodium amytal narcosis. Duration eight days.	(1) Returned to normal for 10 days. Then developed hypomanic phase. (2) Returned to normal for 10 days, became quiet and seclusive, but discharged definitely improved in four weeks.	Classified permanent improvement, subsequently recovered at home.

## APPENDIX SHOWING DETAILS OF CASES STUDIED.—CONTINUED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
4	14627	43	M	Russian Jew. Moody, intensely emotional. Legal entanglements culminating in prison sentence. Sudden onset of acute mania with homicidal trend.	Manic-depressive, manic.	(1) Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 7 days. (2) Sodium amytal—12 days narcosis.	(1) Normal for four days. Then became depressed, sulky, resentive and mute. (2) Normal for seven days. Then slight depression followed in three weeks by recovery.	Recovered. Returned to former occupation.
5	14628	25	M	American. Normal extrovert personality. One previous manic phase of five months' duration. Interval three years. Present manic phase three weeks' duration.	Manic-depressive, manic.	Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 10 days.	Physical prostration severe. Recovered in two weeks. Discharged at end of 1 month.	Classified "recovered." Returned to former occupation.
6	14629	56	M	Russian Jew. Energetic cyclothymic type. Displayed manic drive in business and social life. Acute manic phase eight months' duration.	Manic-depressive, manic.	Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 12 days.	Physical prostration severe. Normal four weeks after beginning treatment.	Classified "recovered." Discharged four weeks after treatment.
7	10251	43	F	German-American. Unfavorable hereditary and environmental factors. Early personality unstable. Maladjusted in marriage. Psychotic phase began three years prior to treatment.	Manic-depressive, benign stupor.	Sodium amytal. Duration of narcosis 8 days.	No change.	Classified changed one year after treatment recovered and discharged.
8	14630	15	M	American. Hereditary factors very unfavorable. Two psychotic siblings. Mother psychotic. Psychosis at 13 of five months' duration—undiagnosed. Interval 1½ years.	Unclassified psychosis (manic schizoid).	(1) Sodium amytal plus hyperpyrexia. Duration of narcosis 10 days. (2) Sodium amytal—duration seven days.	(1) Changed from manic reaction to catatonia. (2) Rapid improvement. Recovery complete in two weeks.	Classified recovered. Returned to school.

## APPENDIX SHOWING DETAILS OF CASES STUDIED.—CONTINUED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
9	10252	40	F	Irish-American. Early environmental factors unfavorable. "Always delicate." Marked mood swings accompanying menses. Psychosis of nine months' duration prior to treatment.	Manic-depressive, agitated depression.	Sodium amytal. Narcotic phase eight days.	Normal for one month. Gradually developed symptoms of same intensity as before treatment.	Classified temporary improvement.
10	14631	24	M	American. Heredity and early environment unfavorable. Mother psychotic. Brilliant in college. Onset of psychosis at graduation from college at 21 years. Duration of psychosis three years.	Schizophrenia, hebephrenic type.	Sodium amytal. Narcotic phase 10 days.	Seemed better for several weeks. Regressed to approximately the level existing before treatment.	Classified unimproved or unchanged.
11	14632	23	M	American. Early personality disorders. Always nervous, unstable, shy, seclusive. Onset of psychosis during college six years before treatment.	Schizophrenia, hebephrenic type.	(1) Sodium luminal and luminal plus hyperpyrexia. Duration of narcosis 10 days. (2) Sodium amytal. Duration of narcosis seven days.	(1) Temporary change for the better. Slow regression. (2) Improved promptly—subsequently regressed but more co-operative.	Classified temporary improvement.
12	14633	19	M	American. Introvert personality but able to do well in school. Sudden, stormy onset of psychosis one year before institution of treatment.	Schizophrenic simple type.	Luminal fortified by hyoscine plus hyperpyrexia. Narcotic phase 10 days.	Developed insight quickly. Cooperated throughout treatment. Recovered completely in one month and discharged.	Classified recovered. Recent report (1½ years after treatment) indicates complete recovery.
13	10253	30	F	German-Jewess. Unstable marital adjustment. One previous psychotic depression four years ago. Present illness appeared in immediate puerperium. Suicidal, mutilated self.	Manic-depressive, depressed.	Luminal fortified by hyoscine, plus hyperpyrexia. Duration of narcosis 13 days.	Very difficult to maintain sleeping phase. Showed marked improvement but complete recovery did not follow until nine months after treatment.	Classified permanent improvement.



## APPENDIX SHOWING DETAILS OF CASES STUDIED.—CONTINUED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
14	10254	27	F	American. Early personality apparently normal. In adolescence became moody and seclusive. At 19 developed catatonia. Duration of psychosis eight years.	Schizophrenia, catatonic type.	Sodium amytal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 11 days.	Improved promptly, remained cooperative for four to six weeks. Gradual regression to former state.	Classified temporarily improved.
15	14634	24	M	American. Heredity strongly tainted with mental disease. Onset of psychosis acute during start of professional career. Catatonic with phases of excitement. Duration of psychosis prior to treatment six months.	Schizophrenia, catatonic type.	Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 12 days.	Recovery from completion of treatment.	Classified recovered. Returned to professional career.
16	10255	37	F	German-American. Schizoid personality, suspicious, seclusive. Wide mood swings with periods of depression and hyperactivity. Two previous manic phases with strong paranoid trend. Present psychosis eight months' duration.	Unclassified psychosis, "manic-schizoid."	Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 10 days.	Improved rapidly. Became sociable, went home for visits, etc. After one month returned suddenly to former state.	Classified temporarily improved.
17	10256	24	F	German-American. "As-thetic type," "always delicate." Depression followed sudden death of fiancé and mother. Duration of psychosis one month.	Manic-depressive (depressed).	Luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis 12 days.	Gradual improvement to complete recovery in one month.	Classified recovered. Follow-up indicates permanent recovery.

## APPENDIX SHOWING DETAILS OF CASES STUDIED.—CONTINUED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
18	10257	44	F	Russian Jewess. Unstable marital situation. Manic attack 12 years ago with recovery in seven months. Religious fanaticism followed the first illness. Present attack has strong religious trend. Duration of psychosis two months.	Manic-depressive, manic.	Luminal and sodium luminal fortified by hyoscine plus hyperpyrexia. Duration of narcosis nine days.	Gradual recovery in one month.	Classified recovered. Recent follow-up indicates permanent recovery.
19	10258	20	F	American. Unfavorable early environmental factors with series of severe emotional shocks. Hysterical aphonia and convulsions for one year.	Psychoneurosis hysteria.	Sodium amytal. Duration of narcosis eight days.	Rapid recovery.	Classified recovered. Follow-up 10 months indicates permanent recovery.
20	10259	27	F	American. Heredity strongly tainted with mental disease. Only child with unfavorable early environment. Developed catatonic stupor four years before treatment. Sudden onset. Fixed posture. Fed by tube.	Schizophrenia, catatonic type.	Sodium amytal narcosis five days.	Patient developed a functional left hemiplegia and hemianesthesia but was cooperative, pleasant, and sociable. Question of whole clinical picture being hysteria. Subsequently regressed to catatonia.	Classified temporary improvement.
21	10260	29	F	American. Extrovert personality, very energetic and sociable. Psychosis developed suddenly four months after marriage. Is violent, destructive, mute. Duration of psychosis three years. Force fed.	Unclassified psychosis, manic-schizoid.	Sodium amytal and luminal. Narcosis 10 days.	Improved four days, talked, ate voluntarily, quiet and cooperative. Rapidly returned to former state.	Classified unchanged.

## APPENDIX SHOWING DETAILS OF CASES STUDIED.—CONTINUED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
22	10261	27	F	American. Always dependent, moody, with cyclothymic swings. Manic-depressive (depressed) phase at 19 from which patient recovered in four months. Present psychosis of two months' duration. Suicidal, agitated, noisy, resistive, force fed.	Manic-depressive, agitated depression.	Sodium amytal. Narcosis seven days.	Improved for three days but rapidly became agitated and noisy, suicidal, etc.	Classified unchanged. un-
23	10262	36	F	American. Heredity unfavorable with manic-depressive psychosis prominent in family history. Aggressive in youth. Cyclothymic swings marked. Previous manic phase eight years ago lasting eight months. Present psychosis acute mania of five months' duration.	Manic-depressive, manic.	Sodium amytal. Narcosis eight days.	Prompt improvement continuing to complete recovery in four weeks.	Classified recovered. Recent follow-up one year after treatment "remains well."
24	10263	50	F	American. Hereditary factors unfavorable. Capable in early life. Depression at 32. Thyroidectomy 1925. Present psychosis appeared one year after operation. Agitation very marked.	Manic-depressive, agitated depression.	Sodium amytal. Narcosis of seven days' duration.	Improved for two or three days. Rapidly returned to marked agitation and pronounced depression.	Classified unchanged.

APPENDIX SHOWING DETAILS OF CASES STUDIED.—CONCLUDED.

No.	Case No.	Age.	Sex.	History.	Psychosis.	Method of narcosis.	Results.	Remarks.
25	10264	24	F	Russian Jewess. Hereditary factors among collaterals. Early environment very unfavorable. Onset of psychosis gradual with multiform delusions and hallucinations. Active, noisy, marked flight of ideas and destructiveness.	Unclassified psychosis (manic-schizoid).	Sodium amytal. Narcosis of seven days' duration.	Gradually became quiet, cooperative, and showed interest in environment. Responded readily to psychotherapeutic approach. Subsequently recovered.	Classified permanently improved. Discharged in eight months.
26	10265	23	F	Irish. Environmental factors unfavorable. Always nervous and sensitive. In adolescence shy, seclusive, and suspicious. Psychosis appeared suddenly after having taken excessive bromides for "anxiety and worry." Duration of psychosis, six months. Mute, negativistic, catatonic with phases of homicidal violence.	Schizophrenia, catatonic type.	Sodium amytal. Narcosis of seven days' duration.	Gradual improvement. Cooperative, quiet, no phases of excitement. Transferred to quieter ward. Remains improved 10 months later.	Classified permanent improvement.

## BIBLIOGRAPHY.

1. Klaesi: Über die therapeutische Anwendung des Dauerschlafes mittels Somnifen bei Schizophrenen. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 74: 557, 1922.
2. Greisinger, W.: *Mental Pathology and Therapeutics*. Trans. by Robertson and Rutherford. Wm. Wood and Co., 1882.
3. Rigg, P. M.: The Bromide Sleep in Cases of Mania. *Brit. M. J.*, 2: 1309, 1900.
4. McLeod, N.: The Bromide Sleep. A New Departure in the Treatment of Acute Mania. *Brit. M. J.*, 1: 134, 1900.
5. Wolff, O.: Trionalkur. *Zentralbl. für Nerven- u. Psychiat.*, 24: 281, 1901.  
*Ibid.*: Trionalkur (Dauernarkose) *Zentralbl. der Nerven- u. Psychiat.*, 30: 128, 1907.  
*Ibid.*: Trionalkur (Dauernarkose) *Ztschr. f. d. ges. Neurol. and Psychiat.*, 94: 783, 1924-25.
6. Moser: Zur Schizophreniebehandlung mit Somnifendauernarkose. *Deutsche med. Wchnschr.*, 49: 884, 1927.
7. Oberholzer, H.: Die Dauerschlafbehandlung mit Somnifen und Luminal an der Psychiatreschen. Klinik Burgholzi. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 110: 81, 1927.
8. Lutz, J.: Über die Dauernarkosebehandlung in der Psychiatrie. *Zeitschr. f. d. ges. Neurol. u. Psychiat.*, 123: 91, 1929.
9. Wyler, J.: Weitere Erfahrungen mit Somnifen in der Psychiatrie. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 94: 20, 1924-1925.
10. Sacristan, J. M., and Pinto, J. G.: Die Dauernarkose von Kläsi bei manisch-depressivem Irresein. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 91: 396, 1924.  
 Sacristan, J. M.: Das Somnifen bei Manesch-Depressiven. *Med. ibera.*, 19: 188, 1925.
11. Stuurmann, F. J.: De Behandeling von Geisteszieken mit Ein Somnifebkuur. *Nederl. Tijdsch. Geneesk.*, 68: 1023, 1924.
12. Furrer, J.: Unsere Erfahrungen mit den Somnifendauernarkosen bei Psychosen. *Schweitz. med. Wchnschr.*, 34: 275, 1924.
13. Müller, Max.: Die Dauernarkose mit flüssigem Dial bei Psychosen speciell bei manisch-depressiven Irresein. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 107: 522, 1927.  
*Ibid.*: Die Dauernarkose mit Somnifen in der Psychiatrie. Ein Überblick. *Ztschr. f. d. ges. Neurol. und Psychiat.*, 96: 653, 1925.
14. Sioli, F.: Über klinische Erfahrungen mit einem neuen Schlafmittel dem Luminal und seinem Natriumsalz. *München. med. Wchnschr.*, 59: 1374, 1912.
15. Wiethold, F.: Die Anwendung der Dauernarkose bei Geisteskranken. *München med. Wchnschr.*, 71: 1460, 1924.  
*Ibid.*: Weitere Erfahrungen mit der Dauer-narkosebehandlung Geisteskranker. *München med. Wchnschr.*, 72: 1460, 1925.

16. Schäfer, H.: Zur Anwendung der "Dauernarkose" in der Psychiatrie. *Archiv. für Psychiatrie und Nervenkrankheiten*, 81: 333, 1927.
17. Berkley-Bell, O. A. R.: Treatment by Prolonged Sleep in Psychiatry. *Indian. Medical Gazette*, 61: 383, 1926.
18. Enke, W.: Das Problem der Dauerschlafbehandlung in der Psychiatrie. *München med. Wchnschr.*, 76: 1961, 1929.  
Enke, W., und Westphal, K.: Avertin als Hypnoticum und Dauerschlafmittel in der Psychiatrie. *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 114: 616, 1928.
19. Maier, R.: Über den Wert von Fussturnübungen in den Schullsonderturnkursen in bezug auf Verkietung von Fussdeformitäten.
20. Loevenhart, A. S., Lorenz, W. F., Martin, H. G., and Malone, J. Y.: Stimulation of the Respiration by Sodium Cyanide and Its Clinical Applications. *Arch. Int. Med.*, 21: 109-129, 1918.  
Loevenhart, A. S., Lorenz, W. F., and Waters, R. M.: Cerebral Stimulation. *J. A. M. A.*, 92: 880-883, 1929.
21. Lorenz, W. F.: Some Observations on Catatonia. *Psychiat. Quart.*, 4: 95-102, 1930.
22. Bleckwenn, W. J.: Production of Sleep and Rest in Psychotic Cases. A Preliminary Report. *Arch. Neurol. and Psychiat.*, 24: 365-372, 1930.  
*Ibid.*: Narcosis as Therapy in Neuropsychiatric Conditions. *J. A. M. A.*, 95: 1168, Oct. 18, 1930.  
*Ibid.*: The Use of Sodium Amytal in Catatonia. *Proc. Assn. for Res. in N. and M. Disease*, Dec. 28-29, 1929. p. 224-229 pub. Williams and Wilkins, 1931.
23. Bleuler, M.: Schizophrenia. A review of the Work of Professor Eugen Bleuler. *Arch. Neurol. and Psychiat.*, 26: 610-617, 1931.
24. Bancroft and Richter: *J. Physical Chemistry*, 35: 1606-1623, 1931.  
Bancroft and Rutzler: *J. Physical Chemistry*, 35: 3452-3479, 1931.
25. Lang and Patterson: *J. Physical Chemistry*, 35: 3425-3481, 1931.
26. Henderson, V. E., and Lucas, G. H. W.: Claude Bernard's Theory of Narcosis. *Jour. Pharm. and Exp. Therapeutics*, 44: 253-267, Feb., 1932.
27. Jelliffe, S. E.: Proceedings of the Assn. for Research in Nervous and Mental Disease. Schizophrenia. Dec. 27-28, 1929. Discussion of Dr. Strecker's paper, p. 188.



## Notes and Comment

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THE PRESIDENT'S ADDRESS.—Dr. Russell in his address at the eighty-eighth annual meeting of The American Psychiatric Association in Philadelphia, as possibly might have been expected at a meeting in the city where the Association had its birth in 1844, reviewed first the history and work of the Association.

He asserted that perhaps the greatest achievement of the Association "is the service it has rendered to the establishment, organization, administration and advancement of the hospital treatment of mental disorders."

From the outset the Association set itself to the task of "alleviating the condition of the insane in every part of the country." Dr. Russell tells in his address how well that task has been performed. He says that it would probably be hard to find another instance in which a voluntary association of physicians has with such ability and devotion applied itself so continuously and so effectively to a public service of such magnitude and importance.

Referring to changed conditions and view-points Dr. Russell says very wisely: "There is indeed much that is new, and it is so intriguing that there is some danger of forgetting that it grew out of what preceded it and that *proficiency in the old is the best preparation for understanding and utilizing the new*" (italics ours).

He says we have entered a promised land discerned by our predecessors, with longings to enter thereupon.

Among the new fields of endeavor in this promised land, he cites mental hygiene. The importance of mental hygiene was recognized by the founders of the Association as well as others of their time.

THE AMERICAN JOURNAL OF INSANITY, now THE AMERICAN JOURNAL OF PSYCHIATRY, was established by Dr. Brigham in 1844, almost as much for popular as for professional enlightenment. Its early articles were upon topics, in many instances which at the present day would be considered within the domain of mental hygiene.

If the curious reader will procure the address of Dr. John W. Francis before the New York Academy of Medicine on November 10, 1847, he will find that that distinguished physician and teacher stresses the need of a "hygiene which will reconcile the conflict between cerebral activity and the functions of life." He states in enlarging upon his subject that the physician is "as often called upon to suggest mental discipline as topical remedies," and urges upon the "serious attention" of his audience "the necessity of looking more narrowly to the primary causes of that vast class of diseases which originate in ill-regulated, overtasked, or inactive mental and moral energies; unsatisfied sympathies harassing domestic cares, and especially the almost rabid ambition for gain or distinction which creates so much of the insanity and invalidism of this country and which presents a field of inquiry and benevolent enterprise which no humane physician is justified in neglecting."

Were Dr. Francis alive, could he have heard Dr. Russell's address, he would be assured that "benevolent enterprises" were at work, and that a large and influential group of medical men were actively cultivating the fields he pointed out.

Dr. Russell sounds a note of warning, a note which is by no means premature in its utterance, lest lay workers, some of them with experience in mental hygiene work, others interested in problems more intimately related to psychological studies, be encouraged in the belief that "psychiatric problems which they meet with can be diagnosed and adequately treated without the aid of psychiatrists."

It is time we think that The American Psychiatric Association took a definite and positive stand against a practice which is gaining a foothold, and we regret to say some encouragement in certain medical circles, whereby, to quote Dr. Russell, "psychologists who are without medical and psychiatric training, social workers and others who have been psychoanalyzed and instructed in psychoanalysis, may also be found engaged in the treatment of psychiatric conditions in private practice."

Dr. Russell's warning will have little effect unless the Association in no uncertain terms condemns a practice at once unscientific and dangerous. Unless reputable psychiatrists who now make use of psychoanalysis, and who enjoy the respect and confidence of

their colleagues take a decided stand against lay practitioners of psychoanalysis, they may, we confidently predict, live to see the method classed in the minds of intelligent laymen with New Thought, Christian Science and we know not what else.

Dr. Russell does not stop, in condemning this practice, but, in emphasizing "the importance of bringing the influence and guidance of the Association to bear upon the newer developments in psychiatric interests and practice," he refers to recent action of the National Research Council with the support of the Carnegie Foundation, which has announced "a study of the present status of mental disorders," "to be directed by the head of the Department of Psychology of one of the leading universities."

The announcement made in the address that a representative of The American Psychiatric Association had been appointed to the medical division of the National Research Council gives some room for hope that more intelligent views as to the proper methods of investigating the "status of mental disorders" may possibly prevail.

The address calls timely attention to the fact that "attempts to obtain the appointment of representatives of psychiatry on various important committees and other bodies have been met by the statement that medicine was sufficiently provided for by one or two representatives of general medicine." The President states, in considering this tendency to eliminate psychiatrists from consideration in matters relating of medical and nursing affairs and to minimize the importance of psychiatry as a department of general medicine, "this view is not based on a clear understanding of the character of psychiatric studies and practice which must necessarily be on broader lines than those of any other branch of medicine."

The original intention of this "Note" was to call brief attention to some of the salient points of Dr. Russell's address, and to commend it to the careful and thoughtful perusal of all of our readers. There have been so many good things in the address that we appear to have gotten out of bounds, for which we crave pardon notwithstanding a good excuse. Dr. Russell stands forth as an exponent of the important duties which lie before the Association, of the breadth and scope of psychiatric studies and practice,

of the importance of the state hospital to the community and to the advancement of psychiatric medicine.

With these views the JOURNAL is in hearty accord. It is also in accord with him as to the need of greater financial resources for the work of the Association, a permanent office or home with a paid executive, and, and this seems to us important, more continuing and intimate contact with the problems which confront us. This can be brought about by frequent meetings of certain of the standing committees and the executive committee, or by semi-annual or quarterly meetings of the whole body. Matters that are considered at an annual meeting only and then perhaps referred to a committee, are very apt to be lost to sight and memory before the next annual meeting.

We have heretofore called attention to the fact that reports and recommendations of committees made to the Association which have involved much labor are received, the recommendations adopted and then no provision made to carry them into effect. What is needed is a continuously active organization and this we conceive to be what Dr. Russell had in mind.

E. N. B.

SECOND ANNOUNCEMENT OF THE TENTH INTERNATIONAL CONGRESS OF PSYCHOLOGY, COPENHAGEN, DENMARK, AUGUST 22 TO 27, 1932:

1. Early application for membership of the Tenth International Congress of Psychology is desirable. (The fees are: for active members Frcs. 150.—, for ladies accompanied by members Frcs. 60.—. For passive members the fee is Frcs. 60.—.)

2. The titles of papers should reach us not later than June 14, and where possible at an earlier date. (Exceptions will be made for very distant countries.)

3. Only typewritten manuscripts will be accepted for publication in the report of the Congress. Manuscripts should be handed in at the offices of the Congress as soon as possible after the opening date. Maximum length of the single reports: 4 printed pages of the size of The British Journal of Psychology.

4. Maximum duration of sectional papers: 15 minutes (exceptionally 20 minutes). The various sections will be arranged so as

to correspond with the papers to be read. Up to the present date (May 10) 85 papers have been announced.

5. The Congress Offices will be in the University itself at *Frue Plads*. Friday, August 19, the offices will be open from 2 to 5 p. m., Saturday and Sunday, August 20 and 21, from 10 to 12 a. m. and from 3 to 9 p. m., and on Monday, August 22, they open at 8 a. m. Telephone: Central 2065. A representative of the American Express Travel Department will be present.

6. There will be an informal reception on Sunday, August 21, at 9 p. m.

7. The opening meeting takes place on Monday, August 22, at 9 a. m. sharp in the University Festival Hall. It is hoped that the Patron of the Congress, H. M. The King, will be present. (Morning dress.)

8. A common symposium with the members of the Northern Congress of Psychiatry will take place during the morning of Thursday, August 25. Leader: Professor A. Wimmer, of Copenhagen. Subject: The methodological principles of pathographic studies.

9. There will be a sectional meeting on terminology under the leadership of Professor Claparède, of Geneva. In a letter to the National Committee the professor writes: "Auriez vous l'obligeance d'annoncer, dans votre prochaine Circulaire, que les psychologues qui auraient des propositions à ce sujet veuillent bien me les adresser avant le Congrès." Professor Claparède's address is: 11, Avenue de Champel, Genève.

10. So far a plan for excursions after the Congress to psychological laboratories has been drawn up for Germany and Austria. See: *Zeitschrift Für Psychologie*, Bd. 125, 1 to 2, page 94; *British Journal of Psychology*, Vol. XII, Part 4, April, 1932, page 388, and *Psychological Bulletin*, Vol. 29, No. 3, March, 1932, page 247.

11. Return tickets with a 50 per cent reduction on the Danish railways are obtainable through The American Express Travel Department. Members who have already booked their return tickets can obtain a refund on application to The American Express Travel Department.

12. Reservation of accommodation during the Congress has been undertaken by The American Express Travel Department, 23, Amagertorv, Copenhagen K., Telegrams: "Amexco, Copenhagen."

*For the National Committee:*

EDGAR RUBIN.

**FRENCH SOCIETY OF PHONIASTRY.**—This society, founded in Paris in May of this year, has for its object scientific and practical studies in the physiology and pathology of voice and speech. The officers of the Society of Phoniatry include Professor Moure, President; Dr. Hautant and Professor Lemaitre, Vice-Presidents; Dr. Tarneaud, General Secretary. Information concerning the society may be obtained by addressing the general secretary, 27 Avenue de la Grande-Armée, Paris 16°.

**PRELIMINARY ANNOUNCEMENT OF SECOND INTERNATIONAL CONGRESS ON MENTAL HYGIENE.**—The Second International Congress on Mental Hygiene will be held in Paris, France, in 1935. Mr. Clifford W. Beers, General Secretary of the International Committee, went to Europe last April to begin the preparatory work.

In May he attended a European conference on mental hygiene held under the auspices of the French League for Mental Hygiene in Paris, at which preliminary steps were taken in the formulation of plans for the Congress, the consideration of a tentative program, and the organization of the necessary arrangement committees. He also visited other centers on the continent and in Great Britain, conferring with representatives of the Belgian League for Mental Hygiene, the British National Council for Mental Hygiene, and other leaders in organized mental hygiene work in Europe.

The International Committee for Mental Hygiene, which now lists some 300 members including representatives from more than 50 countries, was organized to coördinate and stimulate mental hygiene activities throughout the world. It was founded on May 6, 1930, at the First International Congress on Mental Hygiene in Washington, on the twenty-second anniversary of the founding of the pioneer Connecticut Society for Mental Hygiene, on May 6, 1908, shortly after the first edition of Mr. Beers' autobiography, "A Mind That Found Itself," was published. As a result of the publi-



cation of this book (now in its 18th printing) and the continuous efforts of its author and his associates, the mental hygiene movement is now world wide.

Arrangements are being made for the translation of Mr. Beers' book into French, German, Portuguese and Japanese. Editions in other languages will be published later. Permission to do so has been granted by the American Foundation for Mental Hygiene, which owns the copyrights, for the benefit of national societies for mental hygiene in the various countries represented in the International Committee for Mental Hygiene. The proceeds from the sale of the work will be devoted, in each case, to the support of organized mental hygiene work in the country of publication.

The following officers of the International Committee were elected to serve for the ensuing year: *President*: Dr. William A. White, of Washington; *Honorary Presidents*: Dr. William H. Welch, of Baltimore, representing North America; Dr. Gustavo Riedel, of Rio de Janeiro, representing South America; Dr. Edouard Toulouse, of Paris, representing Europe; Dr. Koichi Miyake, of Tokio, representing Asia; Dr. Ralph A. Noble, of Sydney, representing Australia; and Dr. John T. Dunston, of Pretoria, representing Africa. *Vice-Presidents*: Dr. Charles F. Martin, of Montreal, representing Canada; Dr. Joseph Genil-Perrin, of Paris, representing France; Dr. Robert Sommer, of Giessen, representing Germany; Sir Maurice Craig, M. D., of London, representing Great Britain; Dr. G. C. Ferrari, of Bologna, representing Italy; and Dr. Adolf Meyer, of Baltimore, representing the United States. *Treasurer*: Thomas W. Lamont, of New York; *General Secretary*: Clifford W. Beers, of New York; *Chairman of Executive Committee*: Dr. Clarence M. Hincks, of New York and Toronto; *Chairman of Finance Committee*: Orlando B. Willcox, of New York.

NATIONAL PROBATION ASSOCIATION.—1931 YEAR BOOK.—This Association whose membership includes judges, probation officers, psychiatrists and others interested in the scientific study and treatment of crime, calls attention in its recently issued 1931 Year Book to the increasing demand for psychiatrists, psychologists and physicians in the field of delinquency.

To afford some idea of the scope of psychiatric work in the courts of the United States. Dr. Winfred Overholser, Assistant

Commissioner of Mental Diseases for Massachusetts, writing for *Probation*, the monthly bulletin of the National Probation Association, gives the following facts collected through a questionnaire sent out by the National Crime Commission in 1928-29:

Of the 1168 courts included in the study, 110 or 9.4 per cent replied that they were served regularly by a psychiatrist either employed by the court on a full-time or part-time basis or furnished by some other public agency. Six per cent utilized the services of a psychologist. Of 584 judges who expressed the opinion as to the value of medical reports in the disposition of cases, 473 or 81 per cent were frankly favorable.

These results, in spite of the fact that they are now several years old and that they were obtained by the questionnaire method which is not entirely reliable, indicate strongly the already wide-spread employment of psychiatric facilities in the disposition of criminal and juvenile cases. There is every reason to believe that the use of such facilities will steadily be extended.

New York, Pennsylvania, Virginia and Massachusetts have developed an extensive system of mobile psychiatric clinics which are available for advice to adults, for child guidance work and for service to courts and schools. Appointments may be made in advance, and most court cases arising in the smaller centers can be continued if there seems to be good reason to consider a mental examination desirable.

The possibility of utilizing the facilities of psychiatric clinics operated by private organizations should not be overlooked in the localities where they exist. By far the majority of courts today may secure competent assistance, at least for their most urgent cases, if they will familiarize themselves with existing clinics, public and private, in their vicinity, and with the existence of competent private practitioners of psychiatry. There is little doubt that as time goes on the number of such clinics will gradually increase so that they will become more available to the smaller centers of population. The growing demand for these services must bring about their establishment.

Psychiatric reports which are to be helpful to probation officers and judges must be more than bare statements of the presence or absence of mental disease or defect. Such statements, of course, are better than nothing, but ideally these statements should be based upon the social history and mental examinations of the examinee; of the "assets and liabilities" of the individual; of his trends and peculiarities which may be of aid in suggesting the possibility of directing him in channels of usefulness or in determining upon segregation as the only socially helpful solution.

The Year Book, reflecting the present status of knowledge and development in the subjects of probation, juvenile courts, crime prevention, etc., can be had (paper, \$1.00; cloth, \$1.50) by addressing The National Probation Association, 450 Seventh Avenue, New York City.

## Association and Hospital Notes and News.

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THE ANNUAL MEETING IN PHILADELPHIA.—The meeting of The American Psychiatric Association in Philadelphia, May 31 to June 3, was one of the best attended, and the program of papers the largest and most varied in the history of the Association.

There were, we are informed, more than 600 members and guests registered. The Scientific Sessions were divided into two sections, and the interest in the papers read and the discussions provoked by them sustained throughout.

On Monday May 30 the Section on Convulsive Disorders held its meeting in advance of the general sessions of the Association. A full program was presented.

It is a far cry to that evening meeting of the "immortal thirteenth" at Dr. Kirkbridge's residence in West Philadelphia 88 years ago to consider the organization of an association of physicians devoted to the care of mental disorders, and to the meeting at Jone's Hotel on the following day, when The Association of Medical Superintendents of American Institutions for the Insane was organized, with Dr. Samuel B. Woodward of Worcester, Mass., as President, Dr. Samuel White of Hudson, N. Y., Vice-President and Dr. Thomas S. Kirkbride, Secretary.

The condition of the insane, outside the few state and incorporated hospitals, at that time was deplorable. They were immured in almshouses, in jails, in cellars and hidden away in attics. They had no medical care and no nursing. The work which the Association set itself about was to alleviate the condition of these unfortunates and for years its chief interests centered about hospital construction organization and management.

The task was a stupendous one. Ignorance and superstition, apathy on the part of the general population, indifference and parsimony in legislative bodies and sometimes attempts, more or less successful in some quarters, on the part of politicians, to control appropriations and contracts for buildings for the spoils to be gathered, and the personnel of institutions for the reward of political hangers-on, were some of the obstacles to be met and conquered.

In the majority of the states these obstacles have been overcome. There remain unfortunately isolated instances of the work of the spoilsman.

The practical politician is always alert, and those who are anxious for the best hospital service, and the best care and study of mental maladies must be equally alert. The Association in its desire for a broader outlook, with its aspirations for research and scientific advancement, must not forget that without the assurance of a definite continuing tenure of office for medical officers and the sympathetic and intelligent support of legislatures and of the public, its aspirations, as far as their being forwarded by public institutions are doomed to disappointment.

It has done notable and worth while service in the past for better hospitals, better nursing, a higher standard of psychiatric training and personnel—it is to be hoped as the President intimated in his address at Philadelphia, that it will not be tempted, as it faces new responsibilities and a broadened horizon, to let the work which mainly occupied its attention in its earlier years fall into other hands. The work of the Association has so increased that the Council, with the Association's approval has decided to employ a paid executive to assist the Secretary and to have charge of the business affairs of the JOURNAL, conduct correspondence for the various committees, etc.

This is, we believe, a wise step, one which perhaps might to the advantage of the Association have been taken earlier, Dr. James V. May, Superintendent of the Boston City Hospital, was elected President for 1932-33, and the meeting in 1933 will be held in Boston.

E. N. B.

**DR. MAX E. WITTE HONORED BY THE IOWA STATE BOARD OF CONTROL.**—At the Quarterly Conference of the Board of Control of State Institutions, of Iowa, with the heads of the various state institutions at the office of the Board, June 24, 1931, the program for the meeting was so arranged as to do honor to Dr. Max E. Witte, Sr., Medical Superintendent of the Clarinda, Iowa, State Hospital.

This was done in honor of Dr. Witte's having attained his seventy-second year and of 50 years spent in the service of the state in the care of persons suffering from mental disorders.

Dr. Witte was born in Europe, but came to this country when quite young, and both his academic and medical education were, we believe, received here. His first service in psychiatry was at the Mount Pleasant, Iowa, State Hospital, where he served for several years. In 1898 he was promoted from the post of senior assistant at Mount Pleasant to that of medical superintendent of the hospital at Clarinda.

Dr. Witte became a member of The American Psychiatric Association in 1895 and is now a life member. The JOURNAL congratulates him upon his half century of good work, upon the reputation he has gained, upon the friendships he has won, and upon his philosophy of life which permits him to say as his face "is turning more steadily towards the western sun," "I look to the setting sun serene and unafraid." May for him the setting sun be long in getting behind the horizon—may it be only after other years of service that he shall be called upon to answer *adsum!*

THE 1933 MEETING.—Work on the program for the meeting next year in Boston is already under way. Dr. Samuel W. Hamilton, Chairman of the Committee on Program, issues the following statement:

The Committee on Program will appreciate the offer of papers on a wide variety of topics. Certain sessions have already been planned. There will be time for a considerable number of additional contributions if the titles are submitted at a fairly early date. Those who wish to read may bear in mind that a paper, if accepted by this committee, must be abstracted and the abstract, suitable for printing, placed in our hands not later than April 1, 1933. The question which paper to accept among several offered may be decided on the basis of the abstracts submitted. A copy of the completed paper should be supplied to the committee at least a fortnight before the meeting. Twenty minutes is the limit of time allowed for a presentation; shorter communications are especially acceptable.

All papers presented become the property of the Association. Manuscripts should be in suitable form for publication. The original typewritten copy, double spaced, with good margins and upon substantial opaque paper in the finished form that the author desires to have in print, must be handed to the secretary of the Association at the time of reading. Arrangement may be made with the Editor of the AMERICAN JOURNAL OF PSYCHIATRY for printing in other magazines, the papers that do not find space in that JOURNAL.

The Committee on Program are pleased to assist in arranging for the opening of discussion on each paper. Members of the Association are reminded that discussion is by no means limited to those whose names appear in the printed program. Those who read are entirely at liberty to ask whomever they wish to participate in the discussion.

**DR. C. STANLEY RAYMOND APPOINTED TO WRENTHAM STATE SCHOOL.**—The Massachusetts Department of Mental Diseases has announced the appointment of Dr. C. Stanley Raymond as Superintendent of the Wrentham State School for Mental Defectives, to succeed the late Dr. George L. Wallace. Dr. Raymond was formerly Assistant Superintendent of the Walter E. Fernald State School, and for the past three years has been Assistant to the Commissioner for Mental Diseases for Massachusetts. In Dr. Raymond's able hands the Wrentham School may be expected to maintain the high standards set by his distinguished predecessor.

**PSYCHOLOGICAL EXCHANGE.—PSYCHOLOGISTS FOR WORK IN MENTAL HOSPITALS.**—This new journal, edited by James Hargan, M. A., and Norman Powell, M. A., with offices at 507 Fifth Avenue, New York City, is intended to serve primarily the professional interests of psychologists. To this end it maintains a placement information service. From time to time trained psychologists are available for posts in mental hospitals. The editor of the *Exchange* writes:

Just now we have several psychologists who would like to work in mental hospitals for six months or so in return for attendants' pay and the insight they will gain into abnormal psychology. You can imagine the enlightening effect this will have upon the university courses they will later teach, and it is to be hoped they can make themselves useful to the institutions which they enter as internes.

Any director of a clinic who is in need of a psychologist, by writing to us will secure without charge applications from those who meet his requirements as to training and experience.

**AMERICAN OCCUPATIONAL THERAPY ASSOCIATION DIRECTORY.**—The American Occupational Therapy Association announces the issue of its first Annual Directory of Qualified Occupational Therapists, which will include the names of those who applied and were found qualified for admission to the National Register established by the Association early in 1931.

It is interesting to recall that the late Dr. Thomas W. Salmon, who was keenly interested in treatment by occupation—not only for persons suffering from mental and nervous disorders, but for many other types of illness and disability—suggested some years ago that the Association establish a register or directory of properly



qualified workers, "to protect hospitals and related institutions from unqualified persons posing as occupational therapists."

Speaking not only for himself, but for other physicians interested in occupational treatment, Dr. Salmon also said, "We want a directory to which we can refer for information about a candidate for a position in occupational therapy with as much assurance as we refer to the directory of the American Medical Association for information about a doctor."

Acting on the advice of leading medical and nursing organizations, the Association decided, as a first step towards the establishment of a national directory, to set up minimum standards of training, which were first promulgated in 1923. The standards were raised in 1926 and again in 1929, and the latest standards are now being met in the leading training schools recommended by the Association.

It is gratifying to record that graduates of some of the leading occupational therapy training schools in the United States are holding leading positions in other countries; also that several students from abroad are at present taking training in our schools. Copies of the new directory may be secured from the Association at 175 Fifth Avenue, New York, N. Y.

## Book Reviews.

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*Behavior Aspects of Child Conduct.* By ESTHER LORING RICHARDS, M. D.  
(New York: The Macmillan Co., 1932.)

This is a worthwhile book, showing none of the usual undesirable features of others in this field. The facts of child conduct are clearly presented; theoretical discussions are for the most part avoided and there are clearcut abstracts of typical problems of childhood behavior. The genetic-dynamic viewpoint of Adolf Meyer is followed throughout the entire book; hence the studies are objective and the case-histories present the real origin of the difficulties in behavior, centering in the child and his reactions in the home, the school and the community. These developments represent a stage to stage process in which it is possible to trace from the earliest beginning the conduct to be studied. The social psychiatric treatment in each case is clearcut and decisive and failures as well as successes are reported.

This book shows very clearly that Dr. Richards is one of those rare individuals whose writings are equal to her speaking, in which one finds a frank, objective presentation of facts demonstrable to all alike. It is hoped that the excellency of this book will discourage less competent authors from adding to the large literature in this field. This of itself would be a major accomplishment, since parents, teachers, and physicians justifiably make many complaints about the great variety of so-called scientific and authoritative opinions on child behavior.

Those who seek or expect magic formulæ, pseudo-scientific jargon, confusing terminology and highfaluting meaningless expressions will be disappointed in this book. Those who wish to know more concerning child behavior and the blending of medical, social, psychological and educational forces which enter into the situations responsible for the activities of the child will find this one of the most valuable books that have appeared to date.

The reviewer is forced to pick out and comment upon a few parts of a book. To do so in this case means a real injustice. Each chapter is of itself an essay and yet the thirteen chapters comprising the book are so well integrated that one is surprised to know that the volume represents a series of lectures. The first chapter is entitled: "The Rôle of Behavior in the Field of Individual Health." This is in general an introductory chapter. The following quotations indicate the trend of the discussion:

"One of the most difficult things in life is to discuss behavior. It is a matter upon which every human being has very definite opinions. The one point on which we all agree is that behavior is a topic which deals

with the activities of other people . . . mind is not some vague, intangible essence standing aloof and apart from body, accessible only to the incantations of special tests and complexities of investigation. Mind is the human being in action, and this action we speak of as behavior. Behavior is dependent upon two kinds of facts: first, the stuff out of which we are made, biological, intellectual, temperamental; second, the way environment and training have moulded this constitutional stuff."

In Chapter II Dr. Richards presents clearly methods of inquiry centering around the study of behavior, such as early developmental data, habit life, school facts, facts concerning social and economic conditions in the family, family history of stability and instability, etc.

Chapter III deals with physical handicaps and their relations to child behavior. In this chapter Dr. Richards wisely emphasizes the importance of an adequate evaluation of physical disabilities, and the influence these play on child conduct are well illustrated in the case-histories reported. "The effect of poor physical health upon the behavior of the child varies with the temperament of the child and the nature of his physical condition . . ." The prevalent physical problems of childhood are reviewed in this chapter and there is an excellent discussion of the unsolved problems presented in the care of the epileptic child. The chapter ends with the justifiable caution that despite the fact that the physical condition of the child must always be carefully scrutinized and given due consideration in the evaluation of any behavior problem, the parent and the physician must strive to achieve a wise balance between adequate allowance for the physical limitations and making a fetish of it.

Chapter IV is a very meaty one and centers around a thorough discussion of school and the intellectual misfit. Dr. Richards in a very charitable way discusses the school's responsibility for the care of the defective. She points out the opportunities to discover, study and treat these misfits early in their school career in contrast to the haphazard methods of management forced on teachers with the inadequate facilities frequently at their disposal. Twenty-five per cent of school children are mentally retarded and can never get beyond the first four or five grades. The importance of segregating the defective from the retarded is emphasized in this chapter as well as the relationship of these problems to behavior difficulties.

Chapter V, "The Importance of Habit-Training during the Early Years" is a pleasing one, especially in contrast with the unsatisfactory discussions in other books.

"Extensive as is the native equipment of man with its manifold sensations and movements and emotions and interests, it would make a very small showing in an inventory of the whole equipment of the adult. Seldom, except in the internal workings of the body, does one perform a purely instinctive act. Previous learning has usually come in and given modified forms of behavior. We act as we have learned to act; we see what we have learned to see; we are interested in what we have learned to enjoy and we dislike what we have learned to dislike. Yet it would be a great mistake

to suppose that the adult had 'scrapped' his native equipment—except in relation to digestion and similar internal processes—and had built up for himself an entirely new outfit, by means of which he carried on all his rational adult activities. On the contrary, the native equipment, or much of it, remains in use and is built up into the more complex and specialised mechanisms of learned activity."

Chapter VI entitled "Social Conditions and Factors of Behavior" presents clearcut descriptions of everyday situations of personal and economic types along with the importance of poor social conditions in the development of behavior difficulties in the home, in the school and the community.

Chapter VII is entitled "Play Outlets and Misdirected Child Energy." "Education's interest in the recognition and management of the energy life of childhood is not a passing enthusiasm, but the outcome of a progressive study of the nature and needs of growing human beings. Parents who are able to give their children the opportunities of nursery school and kindergarten should consider themselves fortunate. The day is past when school is considered an institution chiefly for the passing on of academic matters from one generation to another by purveyors of knowledge and inspectors of the same. Preparing childhood for life involves a common experiencing of parents and children and teachers and school health workers in a range of activities too great to be included in any circumscribed academic program.

Chapters VIII and IX discuss handicaps in constitutional endowment. The discussion is a clearcut description of the neuropathic constitutional makeup and the importance of its recognition and early treatment. These two chapters are full of interesting case-histories.

Chapter X describes facts and fallacies about fears of childhood. Dr. Richards divides these fears into two main groups: First, objective fears associated with things seen, heard, felt and often underlying experiences inadequately explained at the time; fears of dark and strange places, fears of large bodies of water, fears of high places, fears of loud noises, fears of lightning, fears of doctors, policemen, tramps, etc. These objective fears are started in many children by the emotional reaction in the home,—mothers who faint and scream and go to bed in thunder-storms, etc. Dr. Richards describes these as dangerous foci of infection. The second type of childhood fear consists of vague apprehension and dread, often very hard to trace,—fear of dying and hell, fear of being buried alive, fear of father or mother dying, etc. The relationship of these fears to the common anxiety phenomena of adult life is emphasized along with methods of recognition and management and prevention. The case-histories in this chapter are unusually well chosen.

Chapter XI on "Principles in the Management of Adolescence" is one of the outstanding chapters in the book. "Just as maturity and old age are the mirror of previous years, so adolescence represents the accumulation of self-discipline, mistakes and achievements." The importance of emancipation is clearly indicated in the case histories reported.

The last two chapters in this book are entitled "What About the Delinquent?" (Chapter XII), and "Community Consciousness of Child Health." (Chapter XIII). Both of these chapters should be read carefully by all those interested in delinquency problems. In these chapters Dr. Richards emphasizes the importance of interpreting the behavior of the child instead of judging it.

"Educational training is unintelligent unless it has some reasonable idea for what it is preparing a student. Constructive public sentiment will come into being when we all cease thinking of so-called delinquencies as sporadic occurrences quite removed from our immediate midst. The school cannot handle the delinquent alone, the court and its allied agencies cannot handle him alone, but both institutions can and will work in harmony and accomplish tremendous results when they have a community backing of earnest and intelligent interest in the work which they are trying to do."

This book concludes with a practical caution that no one approach to these problems will be a panacea for human distress.

"Our safest guide is an unbiased study of facts, guided by trained common sense and the balance of a working philosophy of life. Mental hygiene to be wholesome must propel itself in any community by virtue of that community's realization of its need for this form of social health. True science has never yet tried to sell itself as a commodity for barter and exchange, and mental hygiene is no exception in this respect. Organization must ever keep pace with group needs and become established in proportion to medical and social facilities available at any given time to meet these needs. As parents, teachers, doctors, social workers, clergymen we are laying foundations suitable for the structural growth of the future, and in doing so we must not forget that the stone which many a builder rejects may have in it possibilities for becoming the head of the corner."

One finds that this book does not contain the usual number of typographical errors. It is well-bound and the publishers as well as the author are to be congratulated.

We hope that Dr. Richards will again give us the benefit of her experience as well as of her literary ability in another book.

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*Lectures on Psychiatry.* By E. D. WIERSMA, M. D., Professor of Psychiatry, Groningen. (London: H. K. Lewis & Co. Ltd., 1932.)

This volume of 600 pages will be a welcome addition to the libraries of students and former students of Professor Wiersma. It contains the theoretical discussions of the professor's lectures delivered in the University of Groningen from 1896-1930. The approach is psychological. Facts pertaining to aetiology, prognosis and therapeutics are purposely avoided. Exhaustive consideration is given to methods of psychological examination such as may be found in any standard English text on clinical psychology.

The author divides all persons into two groups, those who are adaptable, and those who are not. In the former the "primary function" predominates, in the latter the "secondary function." These two functions are distinguished in every content of consciousness. The first acts while it is in the consciousness; the second "is the after-effect, that is the effect of the consciousness when it is no longer above the threshold." Further, he expresses his appreciation of all disturbances in the psychic as "sinkings-in of consciousness." There are all degrees, from a transient form, as in hysterical seizures, to a definite "lowering of consciousness," as in chronic cases of dementia præcox. The variation in signs and symptoms of mental disease is dependent on this "falling-off."

Some idea of the wealth of materials in this book may be gleaned from the following captions: Chapter I, "Purpose of psychiatry—Psychiatry and neurology—Related provinces—Neurology needs psychology—Facialis hypoglossus anastomose—Transformation of the hypo-glossuscentra—Influence of sensory impressions on movements—Motor perceptions originating from muscular joint and skin sensibility—Investigation of the muscle sensibility—Psychiatry needs neurological knowledge—Connection between somatic and psychical phenomena—Dualism—Materialism—Psychical monism—Psychical interpretation of psychoses."

Chapter IX, "Influence of peripheral stimuli on the degree of consciousness; nose-clamp, metronome-tick, counting of these ticks, elastic band—Investigation of normal persons—Investigation of sufferers from cancer, tuberculosis, from disturbances of the brain, from neurotics—Determination of the reaction-time, the extent of consciousness, the suggestibility, and the fantasy—With somatic disturbances there is dissociation and decreased integrity—Sometimes increased activity—Treatment of the psychical disturbances by suggestion, persuasion, psycho-analysis—Tumors of the brain; general and local phenomena—Connection between the psychical and the somatic phenomena—Fight against psychical and somatic inhibitory influences—Agreement between the unbridled growth of cells of the tumor and the over-production of incoherent thoughts and movements."

The errors in translation and the tendency to repetition and great detail produce a style which is in part halting and confusing; but the study is significant in that it brings us into intimate contact with the views of one who has devoted his life to the study of human relations.

R. MACLACHLAN FRANKS.

*The Meaning of Psychoanalysis.* By MARTIN W. PECK, M. D. (New York: Alfred A. Knopf, 1931.)

The following appears upon the cover slip of this volume and epitomizes perfectly its aims and scope which, in the opinion of the reviewer, seem to have been realized almost ideally—"This guide book to psychoanalysis is designed for readers (including general medical students) who wish an accurate but compressed introduction to the science, free from doctrinal subtleties and points of controversy."



The work itself, comprising some 270-odd pages, is of excellent and convenient format and includes, in addition to the text proper, a good index and a small but very useful glossary. The textual material as such is fully and logically developed about the following chapter heads:—General Remarks, Sigmund Freud and the History of Psychoanalysis (two chapters), Nervous Illness (The Neuroses), The Psychoanalytic System of Psychology, The Psychoanalytic Method of Treatment (two chapters), Summary of Psychoanalytic Treatment, Illustrative Material (four chapters).

The discussions are most direct, balanced and understandable; likewise almost crystalline in conciseness and refreshingly free from confusing over-weighting with not strictly necessary material and controversial entanglements. Also outstanding, is the author's unusually lucid, simple, untechnical and fluent style and mode of expression, contributing tremendously to the effectiveness of the book as a whole, and the ease and enjoyment attendant to its perusal.

In short, Dr. Peck is to be highly congratulated, the reviewer feels, upon having produced a truly fine piece of work, expositing a most important subject and at a very opportune moment. To be really appreciated it must be read and this is most heartily recommended, and for the intelligent layman and elementary student especially.

THEOPHILE RAPHAEL.

*A Study in Undergraduate Adjustment.* By ROBERT COOLEY ANGELL, PH. D. (Chicago: The University of Chicago Press, 1930.)

In this monograph of 164 pages, Professor Angell gives us an inventory of undergraduate "adjustment" or integration, as determined through a recent study of 216 apparently representative University of Michigan students. This study was a very broad and complete one in its scope, scrutinizing searchingly the three major panels of the adjustment situation as it would apply to such a group, thus adaptation academically, socially and to life as a whole.

The procedure throughout was most painstaking and thorough and based essentially upon interview, personal history and test findings, the same carried out by technically very well qualified assistants. Also, the academic performance of the individual student was studied and accorded full weight in the final evaluation of the total situation.

Analysis of the material secured in this study is both statistical and individual, a feature contributing greatly to its meaning and interest. Likewise the presentation is most simple, concise, direct and understandable and the conclusions logical and pertinent. Truly in this small volume, done by the way in admirable fashion by the publishers, much valuable factual material is compressed and much food for thought presented. In the opinion of the reviewer it stands as a real contribution, and is sincerely recommended for careful reading and study to all interested in problems of student adjustment and mental hygiene.

The discussion itself is organized about the following chapter heads, (1) History and Method, (2) General Findings, (3) Intelligence, Cultural Interest, and Background, (4) Academic Adjustment, (5) Social Adjustment, (6) Life Adjustment, (7) Religion, (8) Sex, (9) Self-Support, (10) Fraternities and Sororities, (11) Extra-Curricular Activities, (12) Personal Disorganization, (13) Conclusions, and (14) Appendix: An Exhibit of All the Material upon a Typical Case.

Of especial interest perhaps to the psychiatrist, is the section on personal disorganization. In this category three degrees are differentiated, thus:

"I. Those whose personality problems are so serious as to make unlikely a successful reintegration of personality without psychiatric assistance.

"II. Those whose personalities are not so seriously disorganized as those in Class I but who would find psychiatric consultation of great value.

"III. Those who are not greatly in need of psychiatric aid but who badly need advice of an educational or vocational sort."

Angell classifies 9.7 per cent of his series as falling in the first group, 21.3 per cent in the second and 12.5 per cent in the third, or a total of 43.5 per cent of the entire series for all three groups taken together. Obviously a very significant and arresting fact, especially since it corroborates the findings of others. And, in its discussion, it is not surprising that the author is led to the definite recommendation, as essential to student welfare, of adequate provision for systematic attention along mental hygiene lines.

THEOPHILE RAPHAEL.

*Readings in Psychology.* By RAYMOND HOLDER WHEELER, with special readings by HARRY HELSON, MILTON MARFESSEL, and THOMAS D. CUTSFORTH. (New York: Thomas Y. Crowell Co., 1930.)

The purpose of this book, in the words of the editor, is to give to the beginning student in psychology access to a selected number of experimental investigations. More is done, however, than to present to the neophyte a collection of disparate papers, since a "principle" is followed, and there is a transition from the more general to the more particular and specialized material. The topics are: Social behavior, intelligent behavior, emotive behavior, learning, reaction and observational behavior, the nervous system.

The main service of this work to the psychiatrist may well be that it will show him clearly the technique of the psychological researcher. Moreover, a far better insight into the problems of current psychology may be obtained from this collection of papers than from any textbook.

There is considerable material in the book that is directly germane to psychiatry, and some specifically psychopathological material. A chapter by the editor presents a case of dementia præcox, and interprets the reaction as "socially conditioned." H. H. Goddard has described a "dual personality." There is a study of insight in pre-school children by Augusta Alpert, T. D. Cutsforth has a study of a case of retardation in the blind. A study of fear by the psychogalvanic method is offered by Nancy Bayley. C. P. Richter has written on internal drives. There is a paper by Wheeler

and Cutsforth on synæsthesia. Work by K. S. Lashley on synaptic resistance, by G. E. Coghill on early development of behavior, and by C. M. Child on biological integration deserves attention from the psychiatrist. Some other chapters are less obviously of interest to the psychiatrist.

It is interesting to observe that much of this excellent work is by comparatively unknown writers.

G. E. PARTRIDGE.

*The Mind at Mischief.* By WILLIAM S. SADLER, M. D., F. A. C. S. (New York: Funk and Wagnalls Co., 1929.)

This is a readable, sprightly book, by an experienced popularizer, who is a surgeon, and who has written on various psychiatric themes. There are two introductions: by R. H. Gault, psychologist, and M. Solomon, neurologist.

The author has marked out a middle ground, until now slighted he thinks, between the technical psychiatry and the many books for the public on the well-worn subjects of worry, fear, and the more common phases of functional mental disorders. He begins with some general psychology of the subconscious and of the emotions, instincts and sentiments, and then spreads out into a broad treatment of such topics as fear complexes; worries, dreads and obsessions; fastidious suffering; psychic pain; inferiority complex; conscience complex; feelings of inadequacy; neurasthenia and psychasthenia. A good part of the book is given to topics of the psychic researcher: reality feeling; telepathy and mind reading; hypnotism; spiritualistic mediums and the like.

The work is therapeutic in intent, case material is interesting and abundant, and the reader gets an impression of a resourceful therapist of the "sanitarium" type, who does some practical analysis, and "explains" freely to his patients. There is little of the systematically psychiatric in the book, but the writer does not hesitate to declare his position on various psychiatric matters. The "general practitioner" should find this book useful; the psychiatrist may decide for himself whether Dr. Sadler's hope in writing the book, to have something which he could place in the hands of a patient or the patient's friends, has been realized.

G. E. PARTRIDGE.

*The Essentials of Psychology.* By W. B. PILLSBURY. (New York: The Macmillan Co., 1930.)

Little more needs to be said about this book in reviewing it for a psychiatric journal than that it is a revised edition of a textbook first published nineteen years ago; that it is a conservative presentation of the "accepted facts of psychology"; and that the writer has veered in the intervening years towards "the objective mode of presentation." "The book embodies the newest results, but does not turn its back upon the old." It is no disparagement of this volume to say that it belongs to a class of apparently necessary evils, the elementary text, since it is probably

one of the best of teaching books in its field. The fault of most such textbooks, and this appears to be no exception, is that they somehow contrive to make a great science seem a little trivial. But to suggest that the "accepted facts" of psychology do not entirely represent it, and might not be even the best pabulum for the beginner, would arouse the suspicion, if this be true, that psychology is still "philosophical" and "speculative." So it probably is best for the psychological teacher to play safe, in his textbook, present the new cautiously with the old, and trust to the live word for the inspiration.

G. E. PARTRIDGE.

*The Dissatisfied Worker.* By V. E. FISHER and JOSEPH V. HANNA.  
(New York: The Macmillan Co., 1931.)

The purpose of this book appears to be to exploit the importance of the place of "emotional maladjustment" as a factor in vocational maladaptation, the assumption being that too much attention, relatively, is being given to intellectual and manual incompetency as causes of occupational misfits.

Enough of the general psychopathology of the emotional reactions is introduced to give the uninstructed reader a fair understanding of the main affective deviations.

The book should be useful in a most important field of applied psychology, in which at the present time there must be a vast amount of wastage and misdirected effort from naïve attempts in vocational guidance, adjustment and selection.

G. E. PARTRIDGE.

*A Changing Psychology in Social Case Work.* By VIRGINIA P. ROBINSON.  
(Chapel Hill: The University of North Carolina Press, 1930.)

The writer of this volume is associate director of the Pennsylvania School of Social Health Work, and the book is written in fulfilment of a requirement for the doctorate. It is the production of one seeking to render articulate a "philosophy" in a field in which hopes are high for a more enlightened practice.

The formative periods in the development of the present encouraging appreciation on the part of the case worker of the meaning and scope of the work are traced in the changing phases of psychology to the satisfactory climax, as seen by the writer, in the psychology of Otto Rank, the keystone of which is the concept of relativity in mental life and of dynamic interaction in the present analytic situation.

The social worker is to practice an "individual therapy through a treatment relationship." Conceptually that seems reasonable and desirable, but we wonder whether, in practice, it will work; whether the social worker is not likely to become entangled in her philosophy on one hand and involved in the intricacies of a treatment situation on the other, with no sure footing left for common sense.

G. E. PARTRIDGE.

*An Introduction to Abnormal Psychology.* By V. E. FISHER. (New York: The Macmillan Co., 1929.)

The author of this book is a clinical psychologist, director of the mental clinic of New York University. He states that the work "has been prepared as a text in a first course in abnormal psychology," and that only such knowledge as usually results from a course in general psychology has been presupposed.

The procedure is sufficiently orthodox to inspire little comment or criticism. The "normal individual" is outlined, and types of consciousness are briefly described. The general psychopathology follows, in chapters on the main forms of maladjustment. Next there are two hundred pages descriptive and explanatory of the main functional mental deviations, employing the usual psychiatric terminology, leaning most upon McDougall, and critically directed at least implicitly towards the psychoanalytic doctrines, especially that of the stages of psychosexual development. Between this section and the final chapter on "the feeble-minded individual," there is a bulky section on sleeping, dreaming, hypnotism and suggestion, which writers on psychopathology seem still to find indispensable.

The book invites thought about the proper division of labor between psychologists and psychiatrists in the clinical field. The temperate reader of this book ought to see that the psychologist has something more to do, by way of his psychology, than to measure intelligence and make "personality studies."

G. E. PARTRIDGE.

*Behaviorism.* By JOHN B. WATSON. (New York: W. W. Norton and Company, Inc., 1930.)

On revising his *Behaviorism* of 1925, Dr. Watson observes that behaviorism since its debut about twenty years ago has encountered continuous storm, despite the fact that all it has aimed to do is to apply to the experimental study of man the same kind of procedure and the same language of description that many research men had found useful for so many years in the study of animals; and that it has assumed merely that man is an animal different from the other animals only in the types of behavior he displays. The author has now added a hundred pages to his book, deleted twenty-five or thirty pages of outgrown material, tried to remove some overstatements and exaggerations, made some minor shifts in the theory, but the point of view has not fundamentally changed. In its present form, the book is a text book, brief but fairly comprehensive, interesting beyond most such presentations, emphatic and at least wholly lucid in its theory. Behaviorism seems now to be in definite shape, and offers what may be supposed to be the mature view of the writer upon the fundamentals of psychology. Criticism of this psychology ought, from now on, to be consistently intelligent.

Dr. Watson seems to believe that the storm over behaviorism prevails because behaviorism has had a way of treading upon the hoof of "somebody's

sacred cow": in other words because it requires the giving up of established mores. It brought out the same type of resistance, he thinks, that appeared when Darwin's "Origin of Species" was first published. Somehow that seems a little hard to believe. We are inclined to think that the bad weather which has prevailed in the region of behaviorism was brewed as a protest against the obduracy of the psychological infant in refusing to notice, much less have respect for, certain established facts; and especially because behaviorism insisted upon ignoring a large part of the psychological cosmos which exists because man has had the curious habit of using extensively symbols (mainly verbal) having *specific meanings*, the investigation of which continues to seem to many persons a major work of science, a work in which there may be applied rigorous techniques subjective in nature and not at all applicable in the study of "other animals." "We can throw all our problems and their solutions into terms of stimulus and response," the behaviorist says. That may be so, but, even if it is, why should we? We could probably throw a good part of them into chemical terms, if we wished, but would anything psychological be gained thereby?

It is the psychopathological and psychiatric implication of this behaviorism that is of interest to us at the moment. Psychoanalysis, so far as the behaviorist is concerned may regard itself as *extinct*. "I venture to predict," says Dr. Watson, "that twenty years from now an analyst using Freudian concepts and Freudian terminology will be placed upon the same plane as a phrenologist. "And yet analysis based upon behavioristic principles," he continues, "is here to stay and is a necessary profession in society to be placed upon a par with internal medicine and surgery." The prophets would hardly all agree upon this. If all guesses are allowed without favor one might "venture to predict" that two decades from now "sane" psychiatry will be a tempered mixture of the riper fruits of psychoanalysis and behaviorism, with perhaps some *Gestalt*, etc.; and that psychiatrists will be practicing this psychiatry respectably, lucratively, and, let us hope intelligently.

If Dr. Watson is anywhere right in his generalizations and predictions, the practice of psychiatry (or psychology!) in two decades will have become nothing else than the pursuit of the art of "unconditioning," with perhaps some personality reconstructing otherwise performed. If, as Dr. Watson is "convinced," although he admits that experimental proof is wanting, the ductless glands can be and always are conditioned; and if thinking is a total activity which may at different times be verbal or kinæsthetic or emotional, we may think of a wide range, if indeed not the whole gamut, of the deviations that the psychiatrist treats as functional disorders, as produced by simple processes which may be duplicated in the laboratory, and in accordance with laws which may be verified experimentally. It is easy to see what kind of a psychiatry the behaviorist expects; he expects to see unconditioning done as reliably and perhaps as spectacularly as conditioning. In the behaviorist's hands mental hygiene would consist mainly of prevention of situations in which unfavorable conditioning might be produced, and of accomplishing, let us say, favorable pre-conditioning; while psychiatry would reduce itself mainly to following the child and rapidly unconditioning where the undesirable



habit had unfortunately been produced. The behaviorist pictures to himself a world in which children will be reared in "behavioristic freedom." "Will not these children in turn, with their better ways of living and thinking, replace us as society and in turn bring up their children in a still more scientific way, until the world finally becomes a place fit for human habitation?"

Utopian plans usually, we suppose, overlook some important factor. We fear that if the behaviorist's dream is unrealizable it is because, after all, the environment is a kind of continuum and not a series of definitely conditioning moments, a continuum in which potent persons determine sentiment and mood more by what they *are* than by what they overtly and consciously *do*. None the less we may believe that the technique of unconditioning is an important prospect of psychiatry, and that much will later be heard of it in the psychotherapy of childhood.

G. E. PARTRIDGE,  
Baltimore.

*Safeguarding Children's Nerves.* By JAMES J. WALSH, M. D., and JOHN A. FOOTE, M. D. (Philadelphia: J. B. Lippincott and Company.)

The little volume is very attractively gotten up, extremely simple and clearly written, and stimulatingly illustrated by numerous drawings and apt quotations, introductory to each chapter, drawn from many and varied literary sources. It should no doubt prove of interest to those who, without especial technical training, are concerned with the personality problems of children.

It is true, to be sure, that the work is by no means outstanding for new material or concepts brought out and, in a measure, is criticizable for a certain over-simplification, with too great emphasis perhaps upon what might be termed the "common sense" approach. However, for what it sets out to be, a simple exposition for readers whose interest is essentially practical and technically elementary, it will undoubtedly find an acceptable place. Of not a little help in this regard should be its direct, crisp and vital tone; also, rather less tangible and less easily described, the definitely fresh and pleasing impress left by the authors themselves.

The book (272 pages) contains 18 brief, alert chapters. Among them, the following may be mentioned as representative: The Child in the World of Today; The Nervous Child; Misunderstood and Different Children: Nursing and the Nurse; Rest and Fatigue; Nerves and the Sick Child; Habits, Good and Bad; Habit Spasms—Tics; Backward Children.

THEOPHILE RAPHAEL.

*Die Zerebrospinalflüssigkeit.* (*The Cerebrospinal Fluid.*) By PROF. DR. MED. V. KAFKA. (Leipzig und Wien: Franz Deuticke, 1930.)

This work happily combines a comprehensive discussion of theoretical problems and a clear exposé of the present status of knowledge about the physiological and pathological properties of the cerebrospinal fluid. The topic of the properties of the normal and pathological cerebrospinal fluid is treated fully in its various aspects, as may be seen from an enumeration of

the chapter headings: The macroscopic appearance and microscopic elements of the cerebrospinal fluid; Physical, physico-chemical properties; Chemical constituents; Colloido-chemistry; Ferments; Hormones; Biological and particular properties. In the chapter on particular properties, so called, Kafka studies the toxic and virulent manifestations of the cerebrospinal fluid, its modifications under the effect of ultra-violet rays, and lastly describes the phenomena which one observes when the fluid is mixed with various substances (toluol, ether, etc.).

The study of the cerebrospinal fluid as a whole is followed by a scrutiny of its constitution in various compartments of the cerebrospinal cavity, that is, in the spinal subarachnoid spaces, in the cisterna, the ventricles and the cerebral subarachnoid spaces. In normal conditions the ventricular fluid contains comparatively large amounts of sugar, but very little globulin and no cells. The cerebrospinal fluid, when removed from the cisterna and downward from the spinal subarachnoid spaces, becomes richer in globulin, in the total amount of proteins, and in cells, and poorer in sugar. This shows that the spinal fluid is actually a mixture of fluids derived from different segments of the cerebrospinal cavity.

From the practical standpoint, Kafka's study of the criteria of a normal fluid and of the physiological fluctuations which it may undergo is of the utmost importance. The chapter dealing with fluid alterations in diseases of the cerebrospinal nervous system and of other systems of the organism discusses two particular types of spinal fluid, that is, the so called abnormal and the subnormal fluid. Under the term of abnormal cerebrospinal fluid Kafka designates spinal fluid in which the findings are ranging between normal and pathologic, without clinical pathological manifestations. To illustrate Kafka's concept of "abnormal," as different from "pathologic" one may refer to the following instance: He considers  $8/3$  cells in a cubic millimeter of spinal fluid as the upper limit of a normal cell content; a marked pathological alteration, however, begins with  $15/3$  cells in a  $\text{mm}^3$ . The tentative term "abnormal" for the intermediary cell findings (between  $8/3$  and  $15/3$  cells in a  $\text{mm}^3$ .) would be the more justified, because of the observation that, while such a slightly "abnormal" cell count is mostly associated with some other mild abnormality in the fluid, it is also at times accompanied by distinctly pathological findings. With regard to the "subnormal" spinal fluid Kafka calls attention to the fact that not only chloride and sugar may prove to be below the normal concentration, but also, what is less commonly known, the specific gravity, the concentration of the total protein and the concentration of globulin and albumin, respectively, may be below the normal figures.

In the chapter on the physiology and pathology of the cerebrospinal fluid Kafka presents a concise study, but one very rich in material, as to the problems of the seat, mode of origin and function of the cerebrospinal fluid; he also discusses extensively the up-to-date topic of the "haemato-encephalic barrier" or "barrier between blood and spinal fluid." The main source of the cerebrospinal fluid would lie in the choroid plexuses. This opinion is based on the observation that when various dye stuffs (uranin in Kafka's observation) are injected into the general circulation, they accumulate mainly

in the choroid plexuses; moreover, the injection of pilocarpine, theobromine, ether, an extract of the choroid plexus and that of other substances, known to have different effects on the blood pressure, produced an increase in the pressure of the cerebrospinal fluid; this increase has been attributed to an increased production of fluid. The apparent increase in the amount of fluid in the cerebrospinal canal in response to substances reputed to be glandular stimulants also supports, in Kafka's opinion, the contention that the process of elaboration of the cerebrospinal fluid is mainly a secretory one. He recognizes, however, that the evaluation of any factor, apparently influencing the fluid production, is charged with difficulties, and that the whole problem is far from being clear.

For the "haemato-encephalic barrier," so called, Kafka accepts Walter's term, that is "barrier between blood and fluid," as the most suitable one in the existent state of knowledge. In accordance with Gellhorn, Kafka justly considers that the problem of barrier permeability between blood and spinal fluid cannot be separated from the more general problem of the permeability function in different organs and tissues of a living organism. The specific "barrier permeability" designating the exchanges between the blood and the spinal fluid should not be identified with the process of production of fluid. While in normal conditions the choroid plexuses serve both as the seat of production of the cerebrospinal fluid and as the substratum of the permeability function between the fluid and the blood, in pathological conditions, not only the plexuses but also the entire endothelial lining of the cerebrospinal cavity becomes involved in the permeability. The alteration of the latter may be caused by exogenous factors, such as physico-chemical changes in the blood, and by endogenous agents, that is pathological processes within the cerebrospinal canal. Kafka lays particular emphasis on the contention that the function of the "barrier" between the blood and the fluid cannot be satisfactorily explained by physico-chemical phenomena alone. These phenomena do certainly play an important rôle, but the vital cellular activity is the dominant factor. The term "physiological permeability," suggested by Höber, would, therefore, correctly characterize the "barrier permeability."

The question how to test the function of the barrier is given serious consideration. Kafka believes that the distribution of blood elements between the blood and the spinal fluid cannot be satisfactorily used as a criterion of the function of the barrier for two reasons: first, because certain blood substances may also originate in the subarachnoid spaces, and second, certain blood substances do not pass from the blood into the cerebrospinal fluid. A review of the various available methods of testing the barrier function leads Kafka to the conclusion that Walter's bromide test is the best one to date. He is convinced, however, that it does not give complete information on the barrier function, which should be studied by various tests.

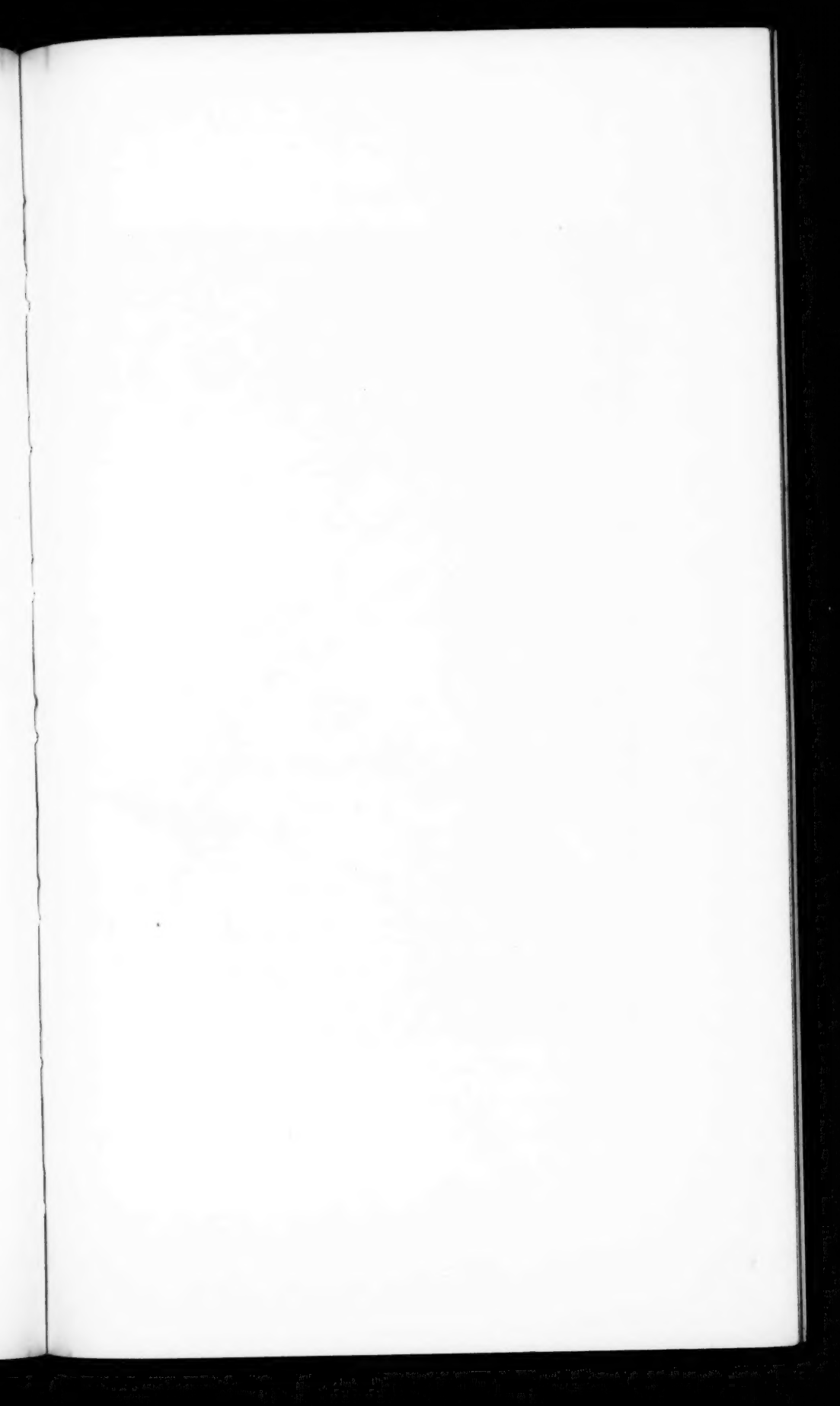
As to the rôle of the cerebrospinal fluid in the physiopathology of the cerebrospinal nervous system Kafka disagrees with those who believe it to be of a mechanical nature only, that is to regulate the space relation between the bone cavity and the cerebrospinal tissue and to protect the latter against

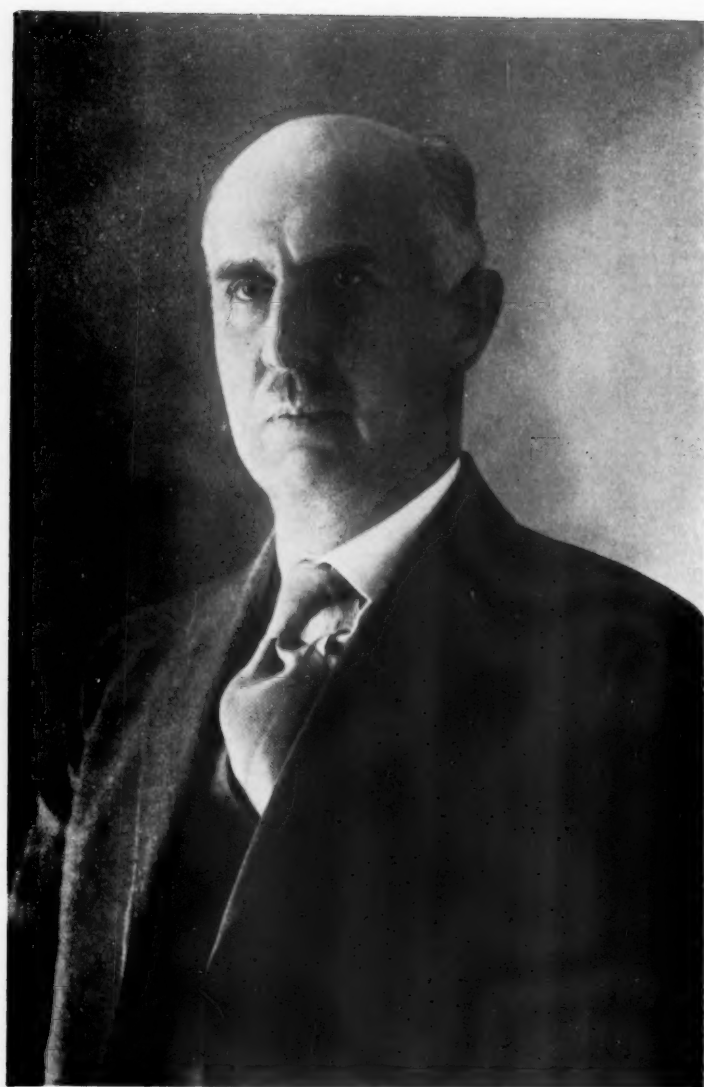
traumatic shock. Kafka contends that the cerebrospinal fluid presents, moreover, the best environment for the nervous tissue; that it takes part in the metabolism of the latter and protects it by various biological protective mechanisms.

The reviewer is fully aware of the fact that this abstract may give but a faint idea of the monumental work of Kafka. In so far as the book presents not only an exposé of his original contributions, but offers also a very extensive and critical review of the literature, it may justly be considered as presenting, in an easily readable form, the actual state of our knowledge on the most vital problems in the field of the cerebrospinal fluid.

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## In Memoriam.

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### DR. WILLIAM HAROP HATTIE.

Dr. William Harop Hattie, whose death was chronicled in an earlier issue of the JOURNAL, was born at Pictou, Nova Scotia, July 27, 1870. From Pictou Academy he went to McGill University where he graduated in medicine in 1891. He was at once appointed to the staff of the Nova Scotia Hospital at Dartmouth, and served this institution continuously until 1913, having succeeded Dr. Sinclair as superintendent in 1908. With interests extending always much beyond the field of institutional psychiatry, Dr. Hattie was in 1913 appointed Provincial Officer of Health, a post which he held until 1922 when he became Professor of Hygiene and of Mental Diseases at Dalhousie University, assuming later the additional duties of Secretary and Assistant Dean of the Faculty of Medicine.

Dr. Hattie was actively interested in all questions of public welfare. He exemplified the duties and privileges of good citizenship in his daily life and work. His medical affiliations included the Canadian Medical Association, the Royal Institute of Public Health, the Canadian and American Public Health Associations; he was a Fellow of the Royal College of Physicians of Canada, and a Life Member of the American Psychiatric Association.

His death, from a heart attack, occurred on the morning of December 5, 1931. Although suffering several years from arthritis Dr. Hattie's indefatigable spirit carried him through, actively at work, to the last of his days.

He has been called the best known medical figure in Nova Scotia; as a pioneer in psychiatry and mental hygiene he was pre-eminent in the Maritime Provinces. A regular contributor to the *Canadian Medical Association Journal*, his diversified interests and scientific activities, and particularly his personal qualities, drew to him the affection and esteem of a nationally wide circle of colleagues and friends.

As a public health officer Dr. Hattie was no mere official, but a man of new and constructive policies, a man of vision whose

innovations will be increasingly appreciated as the years go by. Loyalty, stanch friendship, modesty almost to a fault, were his distinguishing virtues. As an administrator and educator he rendered permanent service to his University and his Province. The following paragraph from the *Canadian Medical Association Journal* gives an intimate glimpse of this well-loved physician:

Although a public servant the greater part of his professional life, Doctor Hattie never lost that gentleness of manner and manifestation of human sympathy so apt to be submerged in those who for many years deal constantly with officialdom. A hard worker and close student, he habitually carried a burden too great for one whose health had long been seriously impaired. A good nature and marked versatility led him to be drafted for extra teaching over a long period of years; conscientious preparation for this work kept him in his study in Dartmouth each night long after his fellow workers had sought repose.

One of Dr. Hattie's teaching experiments deserves special mention. He required his students to make home studies and investigations in environment in their work with patients, realizing that the patient is not an isolated individual, and that a proper understanding depends upon a knowledge of group and community relations and living conditions, obtained by direct first-hand enquiry. The student's grade in hygiene and public health depended upon his ability to apprehend and report upon the divers factors entering into the environmental setting of the patients studied. Every psychiatrist knows that studies of this kind are as important as the examination of the patient—that they are indeed indispensable. Dr. Hattie as a progressive psychiatrist knew that this is true in other fields of medicine as well.

It was the writer's privilege to know Dr. Hattie and to enjoy his friendship; his death brought a sense of personal loss. His life has been of great value to his native Province, and his work and influence will remain an inspiration to those who carry on.

C. B. F.

#### THOMAS BESSELL KIDNER.

It is with a feeling of personal loss that I record the passing of Thomas Bessell Kidner. I first met him in 1917 when several of us gathered at Clifton Springs to organize what is now the American Occupational Therapy Association. As time went on

the bond of interest in advancing a knowledge of occupational therapy grew into a firm friendship which death has ended.

I had been anxious about his health ever since I saw him ill last February, but letters from him gave no indication that all was not well. Reports from friends, however, indicated that he had lost some of his vigor and energy and that he fatigued easily. Yet it was a shock to learn that he had died suddenly on the morning of June 14.

Tom Kidner, as he liked to be known to his friends, had had a most interesting life and I've often wondered what fine material it would have provided for a writer such as Joseph Conrad. As we walked along a New Orleans street together a couple of years ago he pointed out a house to me and said he had a feeling that he had seen one like it somewhere else. In a brief time he told that it was in Calcutta. This feebly illustrates what a storehouse of interesting facts his mind was, and because of a facile memory he was able to produce these interesting bits at will. But it was not only the trivial things he was able to bring forth, but also accurate data of value to all of us interested in hospitals. He was always able to give a reason for such things as placing a doorway, or the height of a step, as well as the bigger things which enter into hospital planning. It was this faculty which made him so successful as a consultant and which also aroused antagonism in some small minded men whose pet ideas he so speedily showed were wrong, despite his tact in so doing.

While hospital planning was his vocation, the advancement of occupational therapy as a profession was an avocation which he pursued when he probably should have been resting. It is gratifying that he should have carried to completion the 1932 Directory of the National Register of Occupational Therapists and it is pleasant to think that he must have been happy that this was accomplished chiefly through his efforts. He had a strong hatred of sham and pretense and it was largely through this and his clear thinking that he was able to expose to his associates the unqualified schools and individuals who promised more than they were able to deliver. It is pleasant to know that a host of friends will mourn the passing of Tom Kidner and miss him.

Mr. Kidner was 66 years old at the time of his death which was probably from cerebral embolism. Born in Bristol, England, he

received his technical education in architecture and building construction at the Merchant Venturers College there, and later in London. In 1900 he came to Canada as one of the organizers under the fund for the improvement of technical education established by the late Sir William C. Macdonald of Montreal. Later he held educational positions in several of the provinces. Soon after the outbreak of the World War he was appointed vocational secretary of the Canadian Military Hospitals Commission. In 1918 he was loaned to the U. S. Government and spent about a year and a half in Washington. In 1919 he was appointed institutional secretary of the National Tuberculosis Association, advising on hospital and sanatorium planning. During this time he made a number of noteworthy contributions to the literature. In 1926 he resigned to engage in private practice as hospital consultant. He was a frequent speaker at hospital meetings, both in this country and abroad.

W. R. DUNTON, JR.